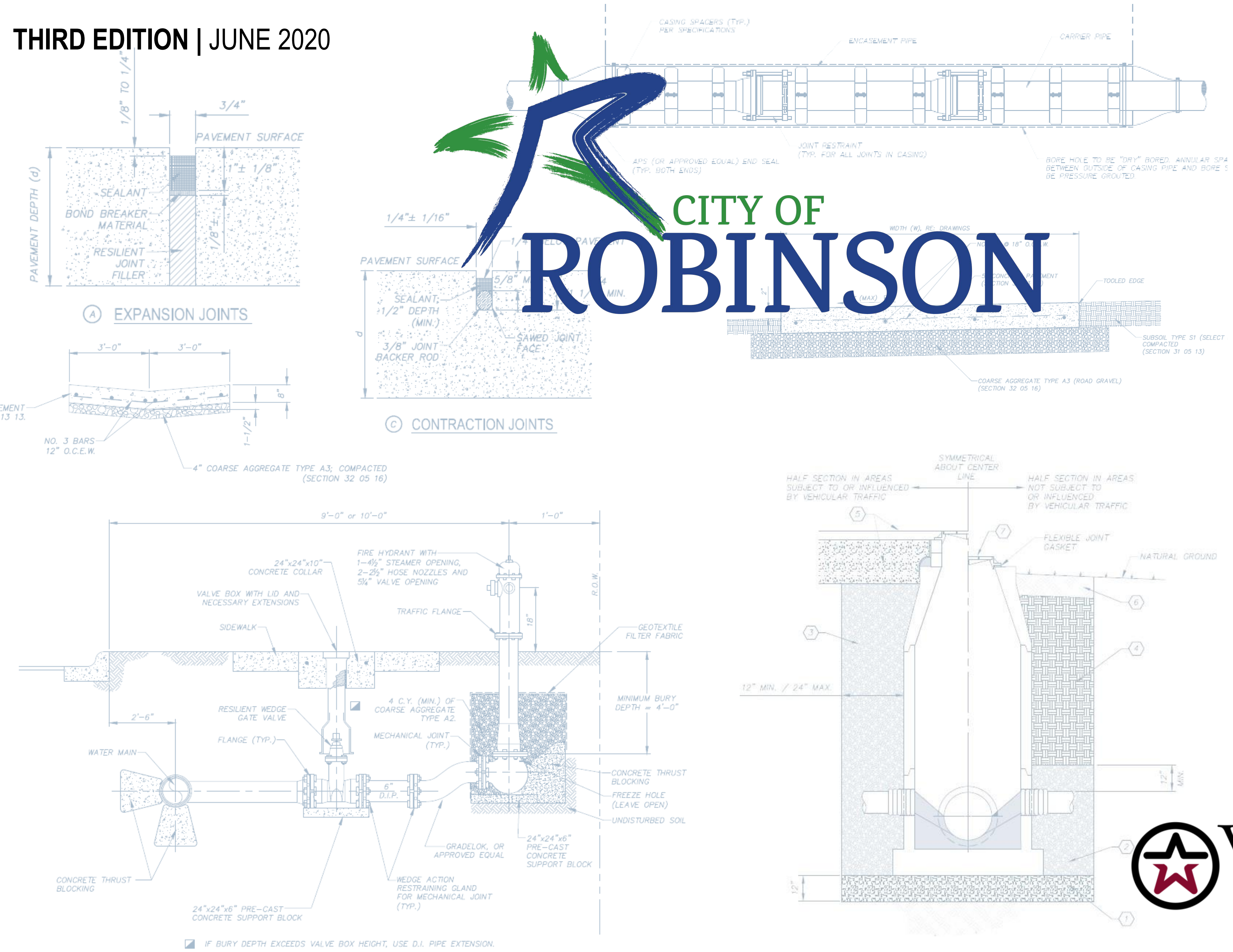
STANDARD DETAILS
FOR
PUBLIC INFRASTRUCTURE

THIRD EDITION | JUNE 2020

CITY OF
ROBINSON


CASING SPACERS (TYP.) PER SPECIFICATIONS
ENCASEMENT PIPE
CARRIER PIPE
JOINT RESTRAINT (TYP. FOR ALL JOINTS IN CASING)
PAVEMENT SURFACE
3/4"
1"± 1/8"
SEALANT
BOND BREAKER MATERIAL
RESILIENT JOINT FILLER
PAVEMENT DEPTH (d)
Ⓐ EXPANSION JOINTS
1/4"± 1/16"
SEALANT; 1/2" DEPTH (MIN.)
3/8" JOINT BACKER ROD
SAWED JOINT FACE
Ⓒ CONTRACTION JOINTS
3'-0"
NO. 3 BARS 12" O.C.E.W.
4" COARSE AGGREGATE TYPE A3; COMPACTED (SECTION 32 05 16)
TOOLED EDGE
COARSE AGGREGATE TYPE A3 (ROAD GRAVEL) (SECTION 32 05 16)
9'-0" or 10'-0"
1'-0"
24"x24"x10" CONCRETE COLLAR
FIRE HYDRANT WITH 1-4½" STEAMER OPENING, 2-2½" HOSE NOZZLES AND 5¼" VALVE OPENING
VALVE BOX WITH LID AND NECESSARY EXTENSIONS
TRAFFIC FLANGE
SIDEWALK
GEOTEXTILE FILTER FABRIC
R.O.W.
RESILIENT WEDGE GATE VALVE
4 C.Y. (MIN.) OF COARSE AGGREGATE TYPE A2
MINIMUM BURY DEPTH = 4'-0"
FLANGE (TYP.)
MECHANICAL JOINT (TYP.)
WATER MAIN
2'-6"
6" D.I.P.
CONCRETE THRUST BLOCKING
FREEZE HOLE (LEAVE OPEN)
UNDISTURBED SOIL
GRADELOK, OR APPROVED EQUAL
24"x24"x6" PRE-CAST CONCRETE SUPPORT BLOCK
WEDGE ACTION RESTRAINING GLAND FOR MECHANICAL JOINT (TYP.)
IF BURY DEPTH EXCEEDS VALVE BOX HEIGHT, USE D.I. PIPE EXTENSION.
SYMMETRICAL ABOUT CENTER LINE
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
FLEXIBLE JOINT GASKET
NATURAL GROUND
12" MIN. / 24" MAX.
12" MIN.

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Walker Partners
engineers ★ surveyors

TBPE Registration No. 8053 | TBPLS Registration No. 10032500

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF ROBINSON'S STANDARD SPECIFICATIONS AND STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE, LATEST EDITION.
2. FOR SLOPES OR TRENCHES GREATER THAN FIVE (5) FEET IN DEPTH, ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPECIFICATION SECTION 31 23 15 - TRENCH SAFETY SYSTEMS.
3. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVE GROUND STRUCTURES AND RECORD DRAWINGS PROVIDED TO THE ENGINEER. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROCESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. BEFORE EXCAVATIONS ARE BEGUN, THE FOLLOWING ENTITIES SHALL BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FIELD LOCATIONS.

   GAS, TELEPHONE, ELECTRIC, FIBER OPTIC: CALL TEXAS 811 AT 800-344-8377

   STORM SEWER, WATER, & SANITARY SEWER: CITY OF ROBINSON AT 254-662-1415
4. CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR, AT NO ADDITIONAL COST TO OWNER.
5. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL KNOWN EXISTING UTILITIES WHICH WILL EITHER BE CONNECTED TO, ADJACENT, OR CROSSED, IF THERE ARE ANY CONFLICTS BETWEEN PROPOSED AND EXISTING UTILITIES, OR IF THE EXISTING UTILITIES ARE IN ANY WAY DIFFERENT FROM WHAT IS SHOWN ON THE DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER BEFORE PROCEEDING WITH ANY CONSTRUCTION. THE CONTRACTOR SHALL WORK WITH THE ENGINEER IN RESOLVING SUCH CONFLICTS BEFORE PROCEEDING WITH WORK.
6. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
7. WHEN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING, OR A BREAK LOCATED IN THE LINE, OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING WORK OPERATIONS, NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. COOPERATE WITH THE APPLICABLE UTILITY COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.
8. THROUGHOUT THE CONSTRUCTION, AND AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT STORM WATER RUNOFF IS NOT BLOCKED OR OBSTRUCTED.
9. CONTRACTOR SHALL INSTALL 2-INCH DIAMETER BY 36-INCH LONG CAPPED PVC PIPE VERTICALLY, WITH TWO (2) FEET OF SURVEYOR'S RIBBON ATTACHED, AT END OF ALL PIPE AND CONDUIT STUBS. TOP OF PIPE MARKER TO BE NOT LESS THAN 12 INCHES ABOVE THE FINISHED GRADE.
   - A. BLUE RIBBON - WATER LINE
   - B. RED RIBBON - WASTEWATER LINE
   - C. WHITE RIBBON - GAS LINE
   - D. YELLOW RIBBON - TELECOM DUCT BANK OR CONDUIT
   - E. ORANGE RIBBON - ELECTRICAL DUCT BANK OR CONDUIT
10. EXISTING PAVEMENT, INCLUDING SIDEWALKS AND DRIVEWAYS, SHALL BE SAWED TO A SMOOTH STRAIGHT LINE AT ALL CONSTRUCTION LIMITS.
11. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS TO THE ENGINEER PRIOR TO THE CLOSEOUT OF THE PROJECT.
12. ANY EXISTING PAVEMENT DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE DRAWINGS AND/OR SPECIFICATIONS TO MATCH, OR EXCEED, EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
13. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED CONSTRUCTION PERMITS PRIOR TO COMMENCING WORK.
14. ANY DAMAGE TO EXISTING STRUCTURES (I.E., FENCES, WALLS, R.O.W. MONUMENTS, SIGNS, CULVERTS, AND CONCRETE APRONS, ETC.) DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE. REPLACEMENT MATERIALS SHALL MATCH EXISTING. ALL REPAIRS MUST BE APPROVED BY ENGINEER.
15. CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AT ALL TIMES FREE FROM TRASH, LITTER, BLOWING DEBRIS, AND SILT RUNOFF.
16. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE SANITATION FACILITIES FOR ITS EMPLOYEES AND SUB-CONTRACTORS.
17. THE CONTRACTOR SHALL BE FAMILIAR WITH THE RIGHT-OF-WAY AND THE LOCATION OF THE RIGHT-OF-WAY AND PRIVATE PROPERTY MONUMENTATION. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT AND AVOID DISTURBANCE TO THE RIGHT-OF-WAY AND PRIVATE MONUMENTATION. IF RIGHT-OF-WAY MONUMENTATION IS DISTURBED BY THE CONTRACTOR, OR SUBCONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND CITY. MONUMENTS, WHICH ARE DISTURBED BY THE CONTRACTOR, OR SUBCONTRACTOR, SHALL BE RESTORED BY A REGISTERED PROFESSIONAL LAND SURVEYOR DESIGNATED BY THE CITY AT THE EXPENSE OF THE CONTRACTOR.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
2. TRAFFIC CONTROL SHALL CONFORM TO APPLICABLE REQUIREMENTS OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (THE LATEST EDITION). ADEQUATE SIGNS, BARRICADES, FLAG PERSONNEL, ETC. SHALL BE ERECTED AND MAINTAINED IN COMPLETE COMPLIANCE WITH THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (THE LATEST EDITION).
4. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES.
5. WHEN WORKING IN OR ADJACENT TO PUBLIC RIGHT-OF-WAY, CONTRACTOR WILL BE RESPONSIBLE FOR ERECTING AND MAINTAINING ALL BARRICADES, FLAGGERS, SIGNS AND OTHER DEVICES NECESSARY TO PROTECT THE PUBLIC AND MAINTAIN TRAFFIC FLOW. IT IS THE CONTRACTORS' RESPONSIBILITY TO FURNISH AND MAINTAIN ALL NECESSARY WARNING AND SAFETY DEVICES (FLASHING LIGHTS, FLAG MEN, BARRICADES, SIGNS, ETC.), AS REQUIRED TO ENSURE TRAFFIC SAFETY AND TO PROTECT THE PUBLIC SAFETY AND HEALTH. NO LANE CLOSURES WILL BE PERMITTED AND CONTRACTOR SHALL MAINTAIN TRAFFIC FLOW AT ALL TIMES IN EXISTING ROADWAYS.

ENVIRONMENTAL NOTES:

1. A STORMWATER POLLUTION PREVENTION PLAN (SWP3) SHALL BE PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ALL DISTURBED AREAS SHALL BE RESTORED AND CONTRACTOR SHALL REVEGETATE ALL EXPOSED CUT & FILL AREAS UPON COMPLETION OF CONSTRUCTION.
3. THE SCOPE OF WORK INCLUDES CLEARING, EROSION CONTROLS, AND TREE PROTECTION REQUIRED FOR CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ONLY TREES SO INDICATED, PLUS TREES SMALLER THAN 8" AS REQUIRED TO ENABLE CONSTRUCTION. REVEGETATION AND ENVIRONMENTAL RESTORATION IS INCLUDED IN THE SCOPE OF WORK.
4. EROSION CONTROL CONSTRUCTION SEQUENCE:
   - A. CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCE AND INSTALL EROSION/SEDIMENTATION CONTROLS, AND TREE PROTECTION FENCING PRIOR TO BEGINNING OF ANY CLEARING OR EXCAVATION ACTIVITIES.
   - B. BEGIN CLEARING FOLLOWED BY CONSTRUCTION ACTIVITIES. PERFORM ALL CLEARING AT START OF PROJECT. INSPECT AND RESTORE EROSION CONTROL DEVICES AND TREE PROTECTION CONTROLS THROUGHOUT CONSTRUCTION PROJECT ACTIVITY.
   - C. ALL TOPSOIL EXCAVATED SHALL BE STOCKPILED SEPARATELY IN A DESIGNATED AREA. UPON COMPLETION OF BACKFILL, TOPSOIL SHALL BE REPLACED OVER DISTURBED AREAS.
   - D. AFTER ACCEPTANCE OF REVEGETATION BY ENGINEER, CONTRACTOR SHALL REMOVE TEMPORARY EROSION/SEDIMENTATION CONTROLS.
5. WHERE SILT FENCING CROSSES UTILITY TRENCH EXCAVATIONS, EROSION CONTROLS SHALL BE TEMPORARILY REMOVED DURING TRENCHING AND PIPE INSTALLATION AND REPLACED IMMEDIATELY UPON COMPLETION OF TRENCH BACKFILLING.
6. IF ANY ENVIRONMENTALLY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, ALL CONSTRUCTION ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY AND THE ENGINEER MUST BE NOTIFIED IMMEDIATELY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES.
8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER EROSION AND SEDIMENTATION CONTROLS.
9. THE CONTRACTOR IS PROHIBITED FROM REMOVING GRASS VEGETATION THROUGHOUT THE ENTIRE PROJECT LIMITS AND THEN CEASING CONSTRUCTION FOR LONG PERIODS, TYPICALLY OVER THREE WEEKS. SHOULD THE PROJECT BE EVALUATED TO HAVE SEDIMENT CONTROL PROBLEMS AS A RESULT OF THE CONTRACTOR DISTURBING EXCESSIVE AMOUNTS OF SOIL, THE CONTRACTOR SHALL BE REQUIRED TO IMMEDIATELY RE-VEGETATE (SEED AND WATER) THOSE DISTURBED AREAS AT NO COST TO THE CITY.

SAFETY NOTES:

1. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
2. ELECTRICAL LINES MAY BE LOCATED CLOSE TO THE PROJECT AREA. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE STATE LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436(c)) CONCERNING OPERATION IN THE VICINITY OF ELECTRICAL LINES & THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES. IT IS A VIOLATION OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS TO OPERATE EQUIPMENT IN SUCH A MANNER THAT PERSONS OR EQUIPMENT COME WITHIN TEN FEET OF AN ENERGIZED ELECTRIC LINE. SUCH REGULATIONS ARE ENFORCED BY OSHA, FEDERAL LAWS. TEXAS CODE ANNOTATED 1990, HEALTH AND SAFETY CODES, SUBSECTION 752.001 ET.SEQ. V.A.T.S. WAS ENACTED FOR THE PURPOSE OF ENSURING THE SAFETY OF PERSONS ENGAGED IN ACTIVITIES WITHIN PROXIMITY OF OVERHEAD LINES. THE LAW PROHIBITS ANY FUNCTION OR ACTIVITY WHERE IT IS POSSIBLE FOR THE PERSON PERFORMING SUCH ACTIVITY TO COME WITHIN SIX FEET OF AN OVERHEAD POWER LINE. THE LAW ALSO FORBIDS ANY PART OF ANY TOOL, EQUIPMENT, MACHINERY OR MATERIAL USED BY SUCH PERSON TO BE BROUGHT WITHIN SIX FEET OF ANY OVERHEAD LINE DURING THE PERFORMANCE OF SUCH ACTIVITY. IN ADDITION, THE LAW PROHIBITS OPERATION OF EQUIPMENT OR MACHINES WITHIN TEN FEET OF ANY OVERHEAD POWER LINE UNLESS CONTACT WITH SUCH LINE HAS BEEN EFFECTIVELY GUARDED AGAINST PURSUANT TO THE PROVISIONS OF THE LAW. VIOLATORS OF THE LAW ARE SUBJECT TO A FINE OR INCARCERATION OR BOTH, IN ADDITION TO CIVIL LIABILITY.
3. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATION, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED.
4. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
5. THE WALLS AND FACES OF ALL EXCAVATIONS IN WHICH EMPLOYEES ARE EXPOSED TO DANGER FROM MOVING GROUND SHALL BE GUARDED BY A SHORING SYSTEM, OR SOME EQUIVALENT MEANS.
6. IN EXCAVATIONS WHICH CONTRACTOR'S EMPLOYEES MAY BE REQUIRED TO ENTER, EXCAVATED MATERIAL SHALL BE EFFECTIVELY STORED AND RETAINED AT LEAST 3 FEET OR MORE FROM THE EDGE OF THE OPEN TRENCH.
7. DIVERSION DIKES, DITCHES, OR OTHER SUITABLE MEANS SHALL BE USED TO PREVENT SURFACE WATER FROM ENTERING AN EXCAVATION. WATER SHALL NOT BE ALLOWED TO ACCUMULATE IN AN EXCAVATION. CONTRACTOR SHALL FOLLOW OSHA REQUIREMENTS FOR TRENCH SAFETY, INCLUDING DEWATERING AS NEEDED. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN EFFECTIVE DEWATERING MEASURES. DEWATERING SHALL BE ACCOMPLISHED AT NO ADDED PAY.
8. BANKS MORE THAN 5 FEET HIGH SHALL BE SHORED, LAID BACK TO A STABLE SLOPE, OR SOME OTHER EQUIVALENT MEANS OF PROTECTION SHALL BE PROVIDED WHERE EMPLOYEES MAY BE EXPOSED TO MOVING GROUNDS OR CAVE-INS.

PUBLIC WATER UTILITY DISTRIBUTION SYSTEM NOTES:

1. ALL PUBLIC WATER UTILITY DISTRIBUTION SYSTEM IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF ROBINSON'S TECHNICAL SPECIFICATIONS AND STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE.
2. THE PROPOSED WATERLINES SHALL BE PVC WATER PIPE, AWWA C-900, CLASS 165 (DR-25) IN ACCORDANCE WITH SPECIFICATION SECTION 04 11 13 – PUBLIC WATER DISTRIBUTION PIPING, UNLESS NOTED OTHERWISE.
3. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE CITY OF ROBINSON PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO ANY WATER SHUT OFF OR TURN ON THAT WILL AFFECT A PUBLIC WATER SYSTEM.
4. 72 HOURS NOTICE SHALL BE REQUIRED FOR SCHEDULED WATERLINE SHUT- DOWNS.
5. THE CONTRACTOR SHALL CONTACT THE PWS OWNER 48 HOURS PRIOR TO CONNECTING TO EXISTING WATERLINES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING PAVEMENTS, CURBS, DRIVEWAYS, SIDEWALKS, GRAVEL ROADWAYS, PIPE CULVERTS, CULVERT HEADWALLS, FENCES, BILLBOARDS AND MISCELLANEOUS ITEMS WHERE REQUIRED TO COMPLETE THE CONSTRUCTION.
7. THERE IS NO PAY ITEM FOR DEWATERING AND NO SEPARATE PAYMENT WILL BE MADE FOR DEWATERING. ANY DEWATERING OF THE TRENCH REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE BID ITEM FOR WHICH IT PERTAINS.
8. INSTALLATION OF ANY PIPE WITHIN 4' OF THE BACK OF CURB OR EDGE OF STREET (EITHER PROPOSED OR EXISTING STREET) SHALL REQUIRE THE SAME BACKFILL AS FOR INSTALLATION BENEATH PAVEMENTS.
9. CLOSED TRENCHES WITHIN THE ROADWAY LIMITS SHALL BE MADE SUITABLE FOR TRAFFIC USE DURING THE NON-WORKING HOURS. IN THE AREA OF THE TRENCH REMAINING OPEN, THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC LANES (24 FT.), OR PORTIONS THEREOF, AND TRAFFIC CONTROL DEVICES IN SUCH A MANNER AS TO PROVIDE SAFE TRAFFIC CONDITIONS. WHERE TRAFFIC LANES ARE PROVIDED OUTSIDE OF THE EXISTING ROADWAY, AN ALL-WEATHER ROADWAY SUITABLE FOR SAFE TRAFFIC OPERATION SHALL BE PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE ALL-WEATHER ROADWAY AT ALL TIMES IN A SATISFACTORY CONDITION ACCEPTABLE TO THE OWNER.
10. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO ALL EXISTING CONNECTIONS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING CONNECTIONS IN THE FIELD.
11. WHERE NEW WATER SERVICES ARE INSTALLED UNDER EXISTING CURB AND GUTTER, THE CONTRACTOR WILL HAVE THE FOLLOWING OPTIONS:
    - A. REMOVE AND REPLACE ADEQUATE AMOUNT OF CURB AND GUTTER.
    - B. PLACE FLOWABLE BACKFILL BENEATH THE EXISTING CURB AND GUTTER.
12. THE CONTRACTOR SHALL BE AWARE THAT CONNECTING TO EXISTING UTILITY LINES OR TERMINATING EXISTING LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS, AND ALL UTILITY TIE-INS MUST BE COORDINATED WITH AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING WORK.
13. THE CONTRACTOR IS NOT AUTHORIZED TO OPEN OR CLOSE WATER VALVES WITH HIS OWN PERSONNEL. THE CONTRACTOR SHALL COORDINATE SUCH WORK EFFORT WITH THE CITY.
14. THE CONTRACTOR SHALL OBTAIN A TEMPORARY CONSTRUCTION WATER METER WITH A BACKFLOW PREVENTION DEVICE FROM THE CITY. THE WATER CONSUMPTION, DEPOSIT, REPAIR COSTS, ETC., SHALL BE CONSIDERED SUBSIDIARY TO THE CONSTRUCTION OF THE WATER DISTRIBUTION IMPROVEMENTS.
15. ALL WATERLINES ARE TO BE HYDROSTATICALLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
16. COMPLETED WATERLINES SHALL BE DISINFECTED IN ACCORDANCE WITH THE SPECIFICATIONS.
17. THE CONTRACTOR SHALL PROVIDE NO LESS THAN 48 HOURS NOTICE PRIOR TO PERFORMING DISINFECTION (CHLORINATION), DECHLORINATION, OR PRESSURE TESTING.
18. ALL WATER LINES SHALL BE COMPLETE IN PLACE INCLUDING ALL BENDS, THRUST BLOCKS, FITTINGS, SERVICES AND APPURTENANCES BEFORE PRESSURE TESTING.
19. ADJUSTMENT OF WATER METERS, VALVES, MANHOLES, IRRIGATION SYSTEMS, AND ANY OTHER PUBLIC OR PRIVATE UTILITY, ETC. ARE NOT SEPARATE PAY ITEMS. THE PRICE OF THE ADJUSTMENT SHALL BE SUBSIDIARY TO THE ITEM(S) FOR WHICH IT PERTAINS.
20. REMOVE AND REPLACE EXISTING WATER SERVICE:
    - a. DURING EXCAVATION ACTIVITIES, IF ABANDONED WATER LINES, STORM DRAIN LINES, AND/OR DRY UTILITY LINES ARE ENCOUNTERED, THEY SHALL BE REMOVED AND THE ENDS PLUGGED (AS NECESSARY). NO PAYMENT WILL BE MADE FOR THIS WORK BUT WILL BE CONSIDERED SUBSIDIARY TO THE WATER SERVICE BID ITEM.
    - b. FOR ANY ABANDONED LINES, WHICH ARE TO BE REMOVED AND NOT ABANDONED-IN-PLACE, CONTRACTOR SHALL PROPERLY DISPOSE OF REMOVED PIPE. WORK PERFORMED, EQUIPMENT, LABOR, AND INCIDENTALS FOR PIPE REMOVAL AND DISPOSAL WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE SUBSIDIARY TO THE WATER SERVICE BID ITEM.

REV.	DESCRIPTION	DATE

CITY OF
ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR
PUBLIC INFRASTRUCTURE

PROJECT NOTES

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
1-000

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TCEQ WATERLINE LOCATION NOTES:

GENERAL

1. WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.
2. POTABLE WATER DISTRIBUTION LINES AND WASTEWATER MAINS OR LATERALS THAT FORM PARALLEL UTILITY LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.
3. NO PHYSICAL CONNECTION SHALL BE MADE BETWEEN A DRINKING WATER SUPPLY AND A SEWER LINE. ANY APPURTENANCE SHALL BE DESIGNED AND CONSTRUCTED SO AS TO PREVENT ANY POSSIBILITY OF SEWAGE ENTERING THE DRINKING WATER SYSTEM.
4. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.

NEW WATERLINE INSTALLATION - PARALLEL LINES.

1. WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING, NON-PRESSURE OR PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS IS ABLE TO DETERMINE THAT THE EXISTING WASTEWATER MAIN OR LATERAL IS NOT LEAKING, THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE EXISTING WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE EXISTING WASTEWATER MAIN OR LATERAL. EVERY EFFORT SHALL BE EXERTED NOT TO DISTURB THE BEDDING AND BACKFILL OF THE EXISTING WASTEWATER MAIN OR LATERAL.
2. WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING PRESSURE RATED WASTEWATER MAIN OR LATERAL AND IT CANNOT BE DETERMINED BY THE LICENSED PROFESSIONAL ENGINEER IF THE EXISTING LINE IS LEAKING, THE EXISTING WASTEWATER MAIN OR LATERAL SHALL BE REPLACED WITH AT LEAST 150 PSI PRESSURE RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE NEW WASTEWATER LINE, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE REPLACED WASTEWATER MAIN OR LATERAL.
3. WHERE A NEW POTABLE WATERLINE PARALLELS A NEW WASTEWATER MAIN, THE WASTEWATER MAIN OR LATERAL SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE WASTEWATER MAIN OR LATERAL.

NEW WATERLINE INSTALLATION - CROSSING LINES.

1. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL IS DISTURBED OR SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
2. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
3. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE STANDARD PIPE SEGMENT LENGTH OF THE WASTEWATER MAIN OR LATERAL IS AT LEAST 18 FEET, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (VI) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
4. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL AND A STANDARD LENGTH OF THE WASTEWATER PIPE IS LESS THAN 18 FEET IN LENGTH, THE POTABLE WATER PIPE SEGMENT SHALL BE CENTERED OVER THE WASTEWATER LINE. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM WITH ONE OF THE FOLLOWING OPTIONS.
5. WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.
6. ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.
7. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL, THE WATERLINE SHALL BE ENCASED AS DESCRIBED FOR WASTEWATER MAINS OR LATERALS IN SUBCLAUSE (II) OF THIS CLAUSE OR CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERLINE AND WASTEWATER MAIN OR LATERAL MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C600 STANDARDS.
8. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (VI) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
9. WATERLINE AND WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SEPARATION. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
10. LOCATION OF FIRE HYDRANTS. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.

PUBLIC SANITARY UTILITY SEWERAGE SYSTEM NOTES:

1. ALL PUBLIC SANITARY UTILITY SYSTEM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROBINSON'S TECHNICAL SPECIFICATIONS AND STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE.
2. SANITARY SEWER PIPE SHALL BE PVC SDR-26 (ASTM D3034) USING BEDDING, EMBEDMENT, AND BACKFILL PER THE TECHNICAL SPECIFICATIONS AND STANDARD DETAILS.
3. AN "S" SHALL BE STAMPED ON THE FACE OF CURB AT THE LOCATION OF EACH SANITARY SEWER SERVICE.
4. ALL SANITARY SEWER ADAPTERS REQUIRED TO CONNECT TO EXISTING SANITARY SEWERS ARE INCIDENTAL TO THE BID ITEM FOR SANITARY SEWER PIPE.
5. ALL STREET AND ROADWAY BORES TO BE DRY BORES AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

PAVING CONSTRUCTION NOTES:

1. WHEN THE TOP OF CURB ELEVATION OR BOTTOM OF PAVEMENT SLAB IS ABOVE NATURAL GROUND, THE PAVING CONTRACTOR SHALL BACKFILL FROM THE NATURAL GROUND TO TOP OF CURB IN LAYERS NOT EXCEEDING 8 INCHES IN DEPTH AND EACH LAYER COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY AND SHALL FILL FROM CURB TO RIGHT-OF-WAY.
2. CONTRACTOR SHALL PROTECT WATER, SEWER, AND DRAINAGE FACILITIES; AND WILL REPLACE AT HIS EXPENSE ANY FACILITIES DAMAGED DURING PAVING OPERATIONS. ALL MANHOLES AND VALVES FALLING WITHIN PAVEMENT AREA SHALL BE ADJUSTED TO FINISHED GRADE BY PAVING CONTRACTOR WITHOUT THE USE OF BLOCKOUTS WHEN DIRECTED BY OWNER (WITH NO SEPARATE PAY).
3. PAVING SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
4. EXISTING PAVEMENT, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED AT NO COST TO THE CITY.
5. ALL ROAD WIDTHS, CURB RADII, AND CURB ALIGNMENT SHOWN INDICATE BACK OF CURB. ALL CURB ELEVATIONS ARE TO "TOP OF CURB" UNLESS NOTED OTHERWISE.
6. ALL PAVEMENT MARKINGS, MAKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (THE LATEST EDITION).

SPECIAL PAVING NOTES:

1. PAVEMENT SECTION(S) SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY ______________________________________, DATED ______________, ON BEHALF OF ____ AS SUMMARIZED BELOW AND AS INDICATED ON DRAWINGS:

STREET	BACK-OF-CURB TO BACK-OF-CURB WIDTH (FT)	LIME SOIL STABILIZATION OF SUBGRADE DEPTH (IN)	CEMENT-TREATED BASE THICKNESS (IN)	HMAC PAVING THICKNESS (IN)

STORM SEWER CONSTRUCTION NOTES:

1. STORMSEWER PIPE SHALL BE RCP (ASTM C76, CLASS III).
2. PRIOR TO FINAL ACCEPTANCE, ALL NEW STORMWATER AND DRAINAGE STRUCTURES SHALL BE CLEANED OUT BY THE CONTRACTOR. THIS WORK WILL NOT BE PAID DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

STANDARD DETAILS FOR
PUBLIC INFRASTRUCTURE

PROJECT NOTES

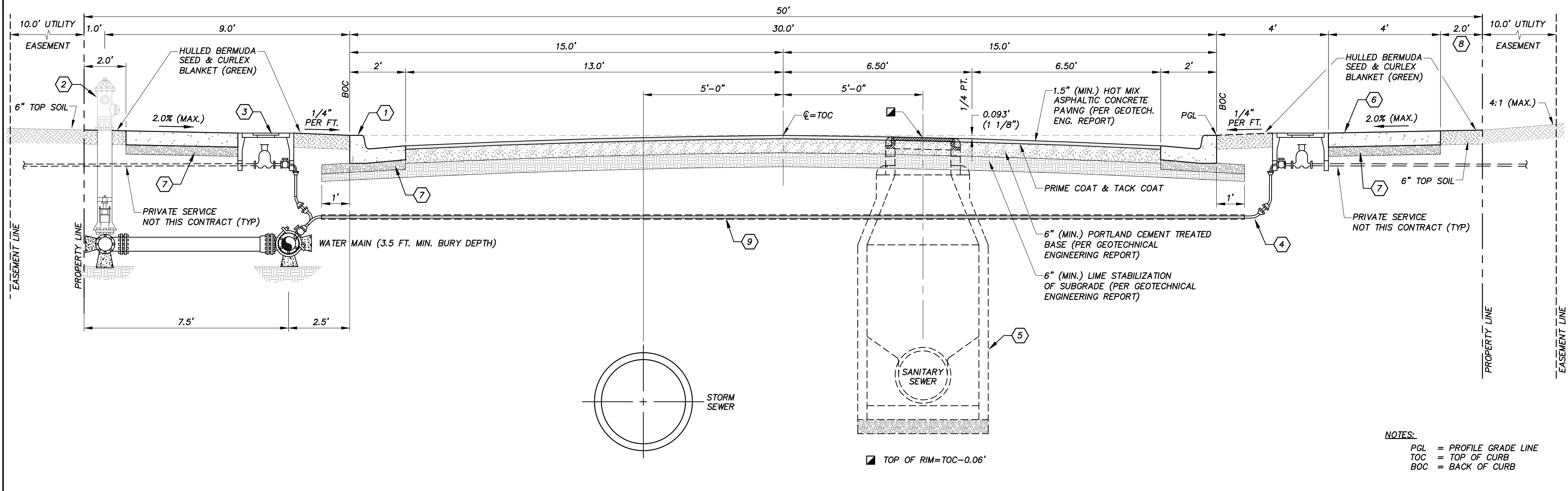
6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

STATE OF TEXAS
GEORGE E. WALKER, JR.
#65360
REGISTERED PROFESSIONAL ENGINEER

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
1-001


50'
10.0' UTILITY EASEMENT
1.0'
9.0'
30.0'
4'
4'
2.0'
10.0' UTILITY EASEMENT
15.0'
15.0'
2.0'
2'
13.0'
6.50'
6.50'
2'
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
BOC
BOC
5'-0"
5'-0"
1/4 PT.
1.5" (MIN.) HOT MIX ASPHALTIC CONCRETE PAVING (PER GEOTECH. ENG. REPORT)
6" TOP SOIL
2.0% (MAX.)
1/4" PER FT.
℄=TOC
0.093' (1 1/8")
PGL
1/4" PER FT.
2.0% (MAX.)
4:1 (MAX.)
PRIME COAT & TACK COAT
6" TOP SOIL
1'
1'
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
WATER MAIN (3.5 FT. MIN. BURY DEPTH)
6" (MIN.) PORTLAND CEMENT TREATED BASE (PER GEOTECHNICAL ENGINEERING REPORT)
6" (MIN.) LIME STABILIZATION OF SUBGRADE (PER GEOTECHNICAL ENGINEERING REPORT)
EASEMENT LINE
PROPERTY LINE
PROPERTY LINE
EASEMENT LINE
7.5'
2.5'
SANITARY SEWER
STORM SEWER
1
2
3
4
5
6
7
8
9

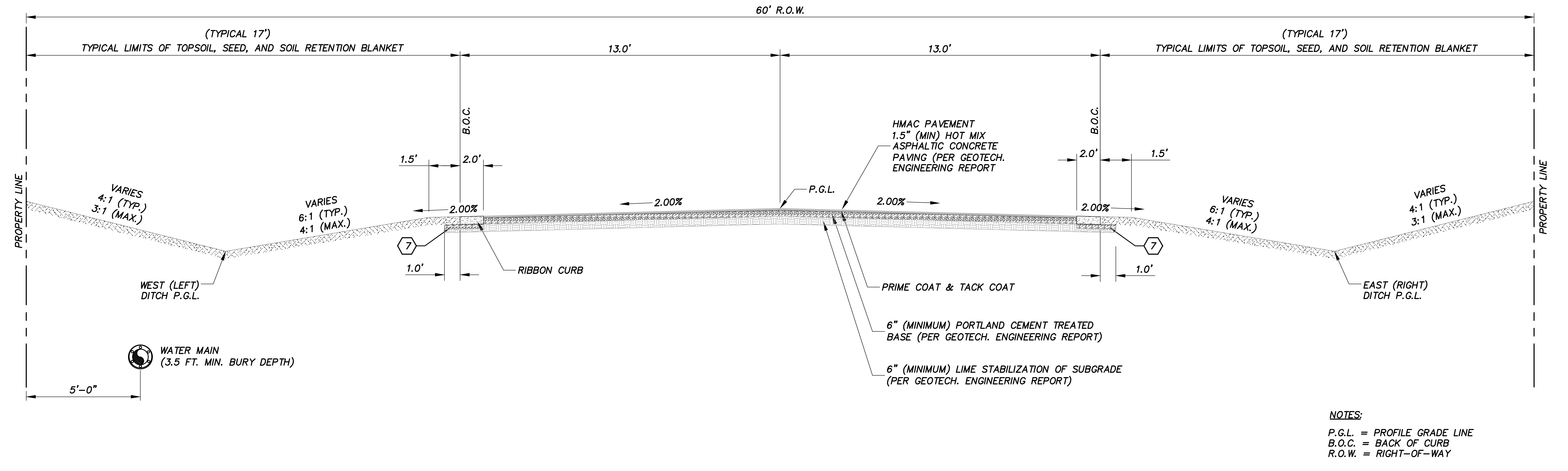
◪ TOP OF RIM=TOC−0.06'

NOTES:

PGL = PROFILE GRADE LINE
TOC = TOP OF CURB
BOC = BACK OF CURB

2011 TYPICAL RESIDENTIAL STREET SECTION (30' BOC - BOC)

1" = 2'


60' R.O.W.
(TYPICAL 17') TYPICAL LIMITS OF TOPSOIL, SEED, AND SOIL RETENTION BLANKET
13.0'
13.0'
(TYPICAL 17') TYPICAL LIMITS OF TOPSOIL, SEED, AND SOIL RETENTION BLANKET
B.O.C.
B.O.C.
HMAC PAVEMENT 1.5" (MIN) HOT MIX ASPHALTIC CONCRETE PAVING (PER GEOTECH. ENGINEERING REPORT
PROPERTY LINE
VARIES 4:1 (TYP.) 3:1 (MAX.)
VARIES 6:1 (TYP.) 4:1 (MAX.)
1.5'
2.0'
2.00%
2.00%
P.G.L.
2.00%
2.0'
1.5'
2.00%
VARIES 6:1 (TYP.) 4:1 (MAX.)
VARIES 4:1 (TYP.) 3:1 (MAX.)
PROPERTY LINE
7
7
1.0'
1.0'
RIBBON CURB
PRIME COAT & TACK COAT
WEST (LEFT) DITCH P.G.L.
EAST (RIGHT) DITCH P.G.L.
6" (MINIMUM) PORTLAND CEMENT TREATED BASE (PER GEOTECH. ENGINEERING REPORT)
6" (MINIMUM) LIME STABILIZATION OF SUBGRADE (PER GEOTECH. ENGINEERING REPORT)
WATER MAIN (3.5 FT. MIN. BURY DEPTH)
5'-0"

NOTES:

P.G.L. = PROFILE GRADE LINE
B.O.C. = BACK OF CURB
R.O.W. = RIGHT-OF-WAY

2014 TYPICAL RURAL RESIDENTIAL STREET SECTION (26' BOC-BOC)

N.T.S

KEY NOTES

1. STANDARD CURB & GUTTER
2. FIRE HYDRANT ASSEMBLY
3. METER BOX
4. RESIDENTIAL WATER SERVICE CONNECTION
5. WASTEWATER MANHOLE
6. REINFORCED CONCRETE SIDEWALK
7. 4" COARSE AGGREGATE TYPE A3 (ROAD GRAVEL)
8. STREET LIGHT POLES AND ASSEMBLIES
9. 2" SCH. 40 PVC CONDUIT

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

TYPICAL STREET SECTIONS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-000

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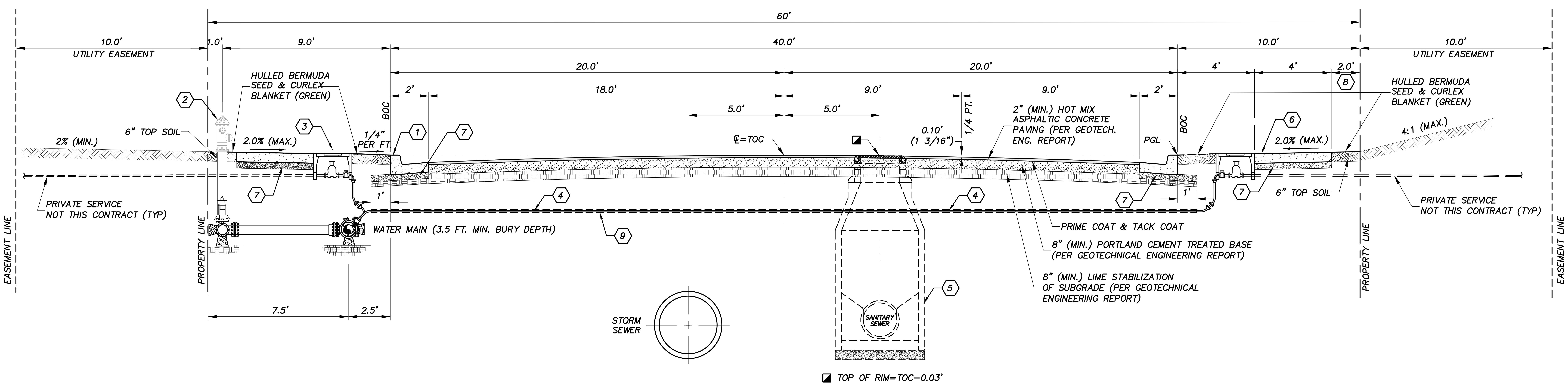
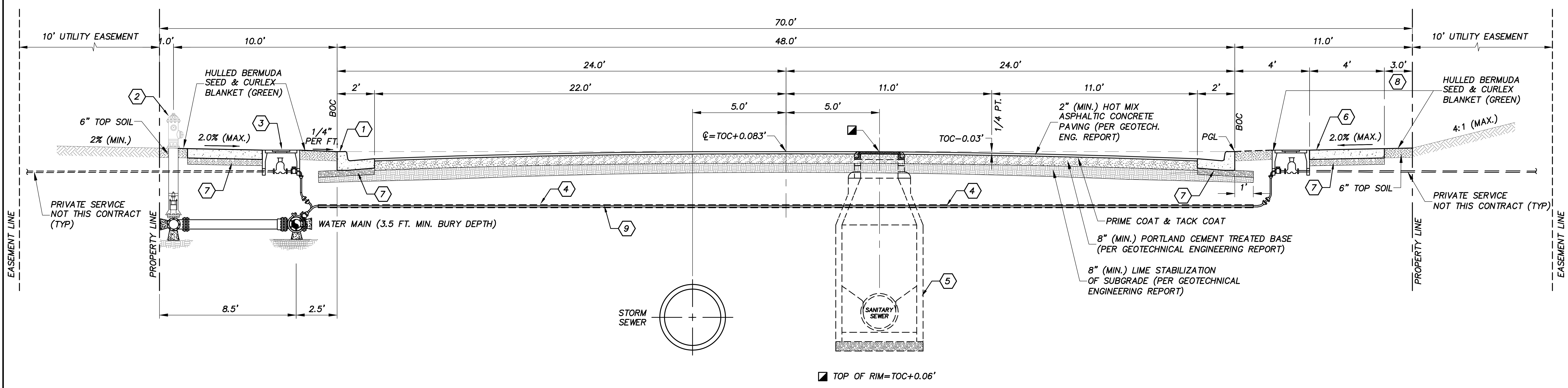

60'
10.0'
UTILITY EASEMENT
1.0'
9.0'
40.0'
10.0'
10.0'
UTILITY EASEMENT
20.0'
20.0'
4'
4'
2.0'
2'
18.0'
9.0'
9.0'
2'
5.0'
5.0'
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
2
6" TOP SOIL
2% (MIN.)
2.0% (MAX.)
3
1/4" PER FT.
BOC
1
7
℄=TOC
0.10' (1 3/16")
1/4 PT.
2" (MIN.) HOT MIX ASPHALTIC CONCRETE PAVING (PER GEOTECH. ENG. REPORT)
PGL
BOC
8
6
2.0% (MAX.)
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
4:1 (MAX.)
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
7
1'
4
4
7
1'
7
6" TOP SOIL
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
WATER MAIN (3.5 FT. MIN. BURY DEPTH)
9
PRIME COAT & TACK COAT
8" (MIN.) PORTLAND CEMENT TREATED BASE (PER GEOTECHNICAL ENGINEERING REPORT)
8" (MIN.) LIME STABILIZATION OF SUBGRADE (PER GEOTECHNICAL ENGINEERING REPORT)
EASEMENT LINE
PROPERTY LINE
PROPERTY LINE
EASEMENT LINE
5
7.5'
2.5'
STORM SEWER
SANITARY SEWER
TOP OF RIM=TOC−0.03'

NOTES:

PGL= PROFILE GRADE LINE
TOC= TOP OF CURB
BOC= BACK OF CURB

2021 TYPICAL RESIDENTIAL COLLECTOR STREET SECTION (40' BOC - BOC)

1" = 3'


70.0'
10' UTILITY EASEMENT
1.0'
10.0'
48.0'
11.0'
10' UTILITY EASEMENT
24.0'
24.0'
4'
4'
3.0'
2'
22.0'
11.0'
11.0'
2'
5.0'
5.0'
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
2
6" TOP SOIL
2% (MIN.)
2.0% (MAX.)
3
1/4" PER FT.
BOC
1
℄=TOC+0.083'
TOC−0.03'
1/4 PT.
2" (MIN.) HOT MIX ASPHALTIC CONCRETE PAVING (PER GEOTECH. ENG. REPORT)
PGL
BOC
8
6
2.0% (MAX.)
HULLED BERMUDA SEED & CURLEX BLANKET (GREEN)
4:1 (MAX.)
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
7
7
4
4
7
1'
7
6" TOP SOIL
PRIVATE SERVICE NOT THIS CONTRACT (TYP)
WATER MAIN (3.5 FT. MIN. BURY DEPTH)
9
PRIME COAT & TACK COAT
8" (MIN.) PORTLAND CEMENT TREATED BASE (PER GEOTECHNICAL ENGINEERING REPORT)
8" (MIN.) LIME STABILIZATION OF SUBGRADE (PER GEOTECHNICAL ENGINEERING REPORT)
EASEMENT LINE
PROPERTY LINE
PROPERTY LINE
EASEMENT LINE
5
8.5'
2.5'
STORM SEWER
SANITARY SEWER
TOP OF RIM=TOC+0.06'

NOTES:

PGL= PROFILE GRADE LINE
TOC= TOP OF CURB
BOC= BACK OF CURB

2031 TYPICAL NEIGHBORHOOD COLLECTOR STREET SECTION 48' (BOC - BOC)

1" = 3'

KEY NOTES

1	STANDARD CURB & GUTTER
2	FIRE HYDRANT ASSEMBLY
3	METER BOX
4	RESIDENTIAL WATER SERVICE CONNECTION
5	WASTEWATER MANHOLE
6	REINFORCED CONCRETE SIDEWALK
7	4" COARSE AGGREGATE TYPE A3 (ROAD GRAVEL)
8	STREET LIGHT POLES AND ASSEMBLIES
9	2" SCH. 40 PVC CONDUIT

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

TYPICAL STREET SECTIONS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-001

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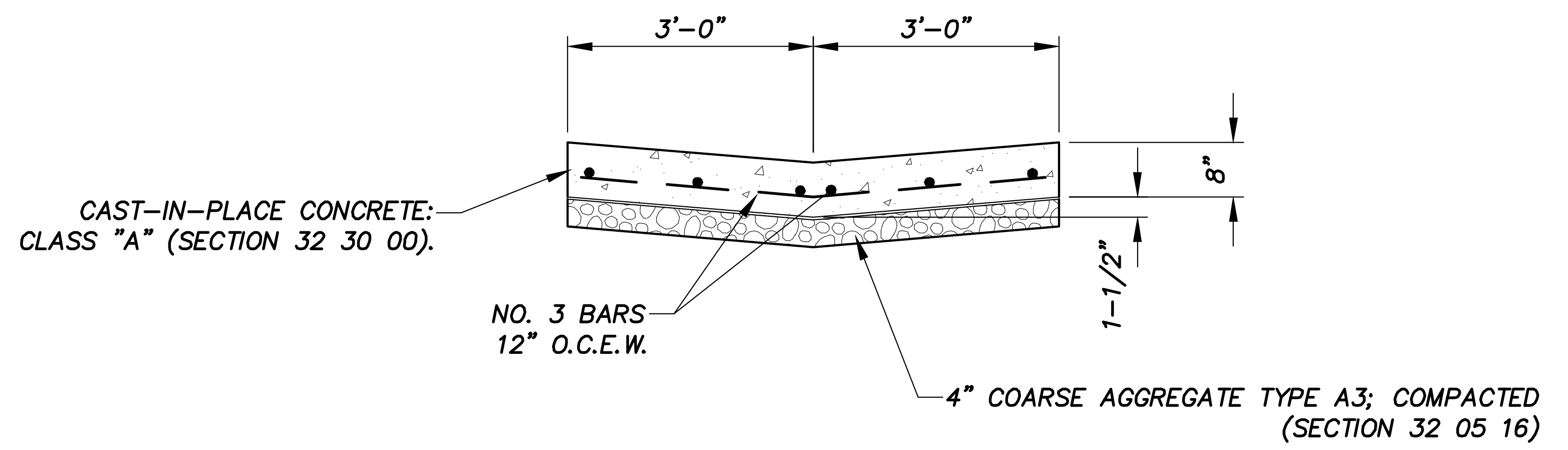
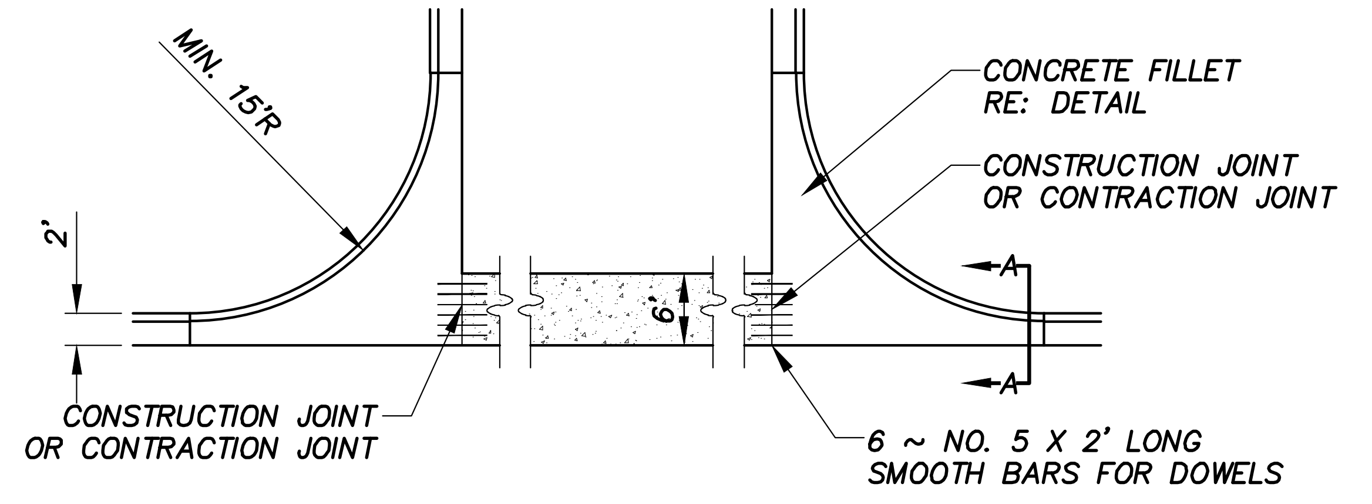


VALLEY CROSS SECTION



STANDARD VALLEY

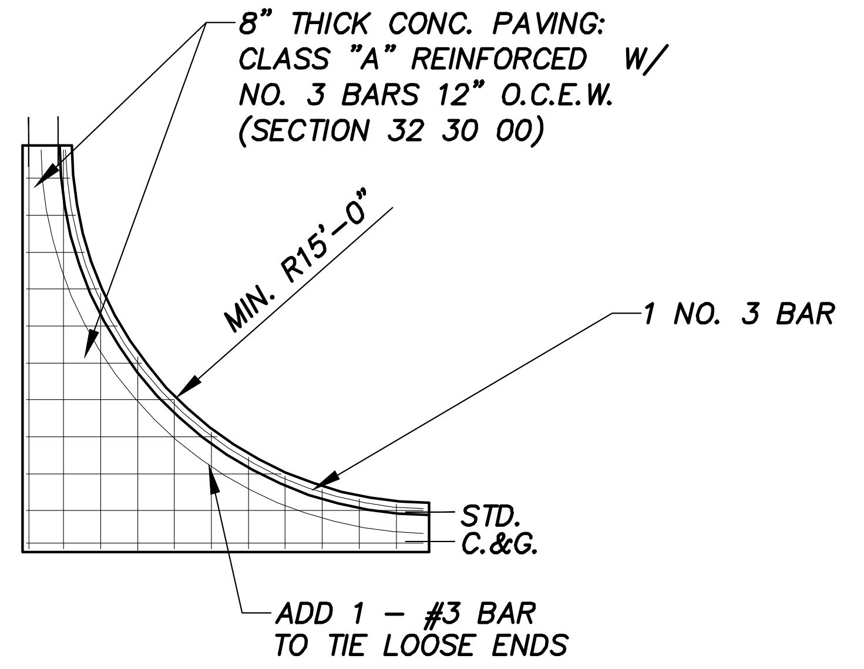
NOTE:

1. UPSTREAM RETURN IN FILLET SHALL HAVE INDIRECT FLOW.

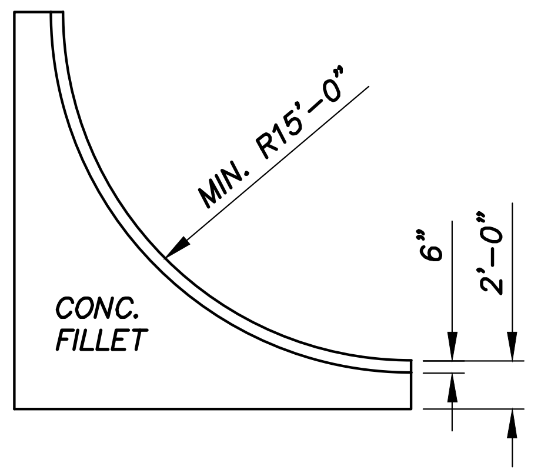
2150 CONCRETE VALLEY GUTTER

N.T.S.

SCALE: N.T.S.



MONOLITHIC CONCRETE CURB & GUTTER FILLET



FILLET PLAN

NOTE:

1. CURB RETURN & FILLET SHALL BE MONOLITHIC.
2. MONOLITHIC INTEGRAL CURB SHALL BE SUBSIDIARY TO THE CONCRETE FILLET.

2160 CONCRETE FILLET

N.T.S.

SCALE: N.T.S.

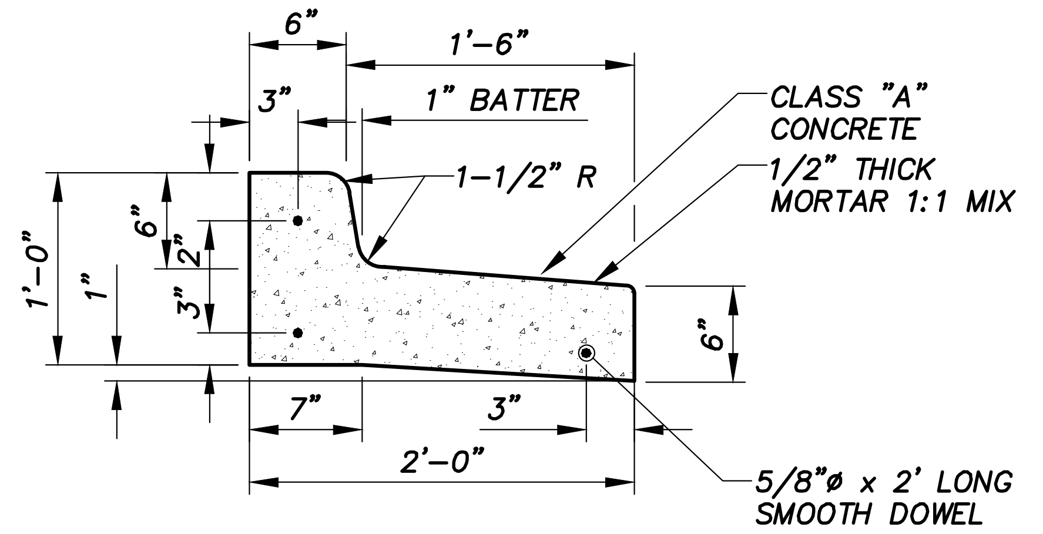
NOTES:

① INSTALL 1/2" PREMOLDED EXPANSION JOINT MATERIAL AT 50' INTERVALS & AT BEGINNING & END OF ALL CURB RETURNS & DRIVE APPROACHES.

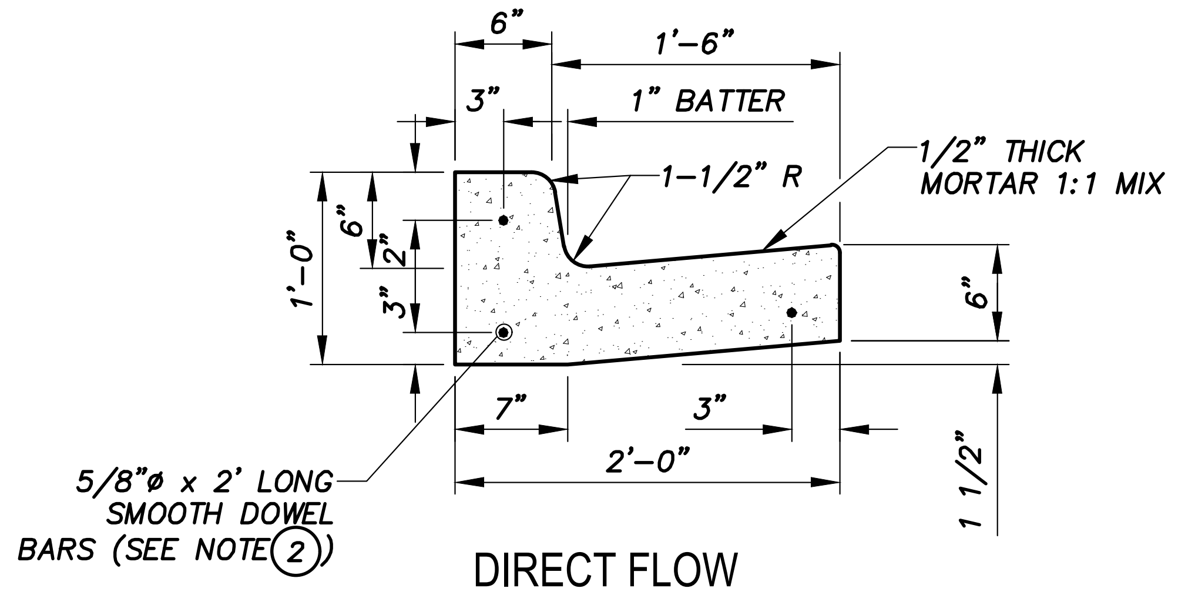
② INSTALL 3 EA. 5/8" ø X 2' LONG, SMOOTH DOWEL BARS AT ALL EXPANSION JOINTS & AT BEGINNING & END OF ALL CURB RETURNS. EXTEND BARS 12" INTO EACH SIDE OF JOINT & WRAP ONE END W/ 15# FELT, 15" LONG.

③ DUMMY JOINTS WILL BE CUT ON 10' SPACING. JOINTS WILL BE CUT AT LEAST 1/2 WAY THRU THE FACE, TOP, AND GUTTER TO INSURE CRACKS WILL OCCUR @ JOINT.

④ STANDARD CURB AND GUTTER SHALL BE CLASS "A" CONCRETE AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 13 00.



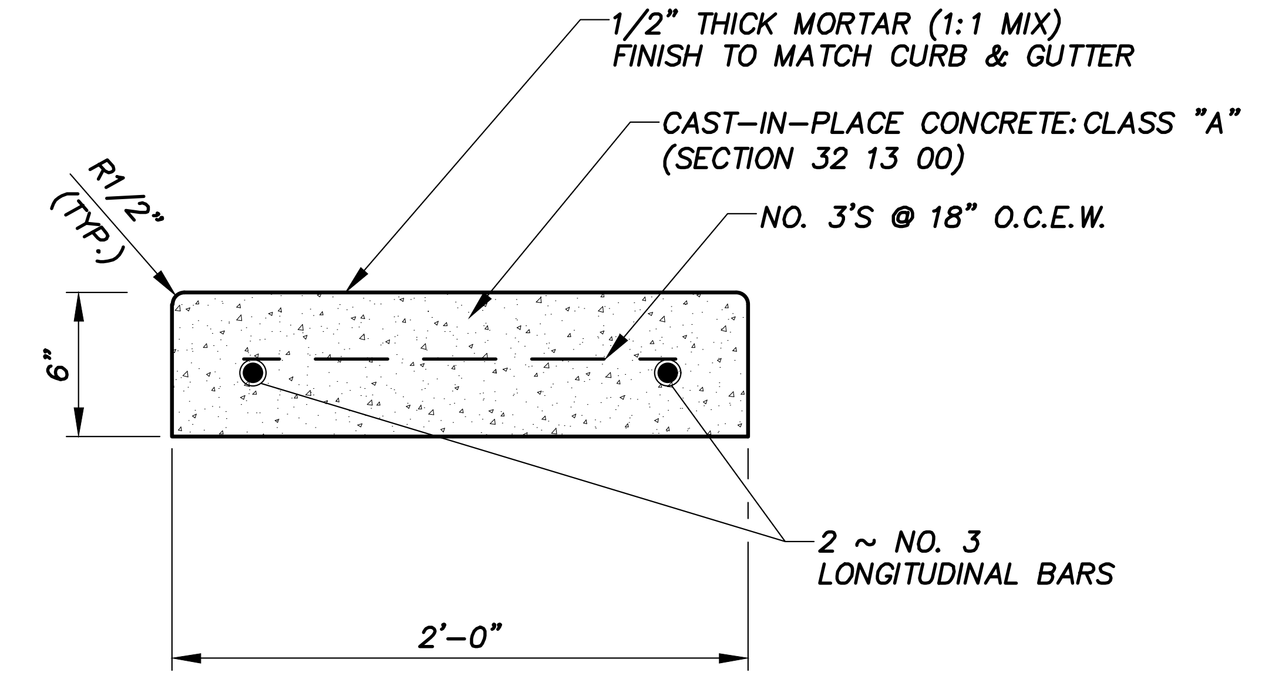
INDIRECT FLOW



DIRECT FLOW

2170 STANDARD CURB AND GUTTER

1" = 1'-0"


1/2" THICK MORTAR (1:1 MIX)
FINISH TO MATCH CURB & GUTTER
CAST–IN–PLACE CONCRETE: CLASS "A"
(SECTION 32 13 00)
NO. 3'S @ 18" O.C.E.W.
R1/2"
(TYP.)
6"
2 ~ NO. 3
LONGITUDINAL BARS
2'–0"

NOTE: RE. CURB & GUTTER DETAIL FOR "NOTES" FOR CONCRETE & JOINTING.

2180 RIBBON CURB

N.T.S.

SCALE: N.T.S.

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

STANDARD PAVING DETAILS

6-1-2020
DATE

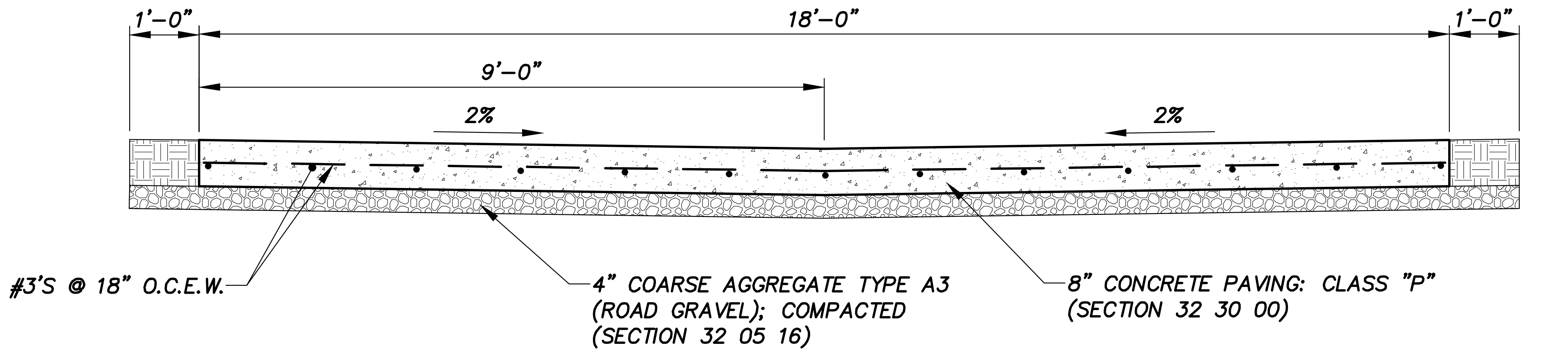
George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-002

G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD PAVING DETAILS.DWG, 2-002 STREET DETAILS, 6/2/2020 10:20:02 AM, achilds

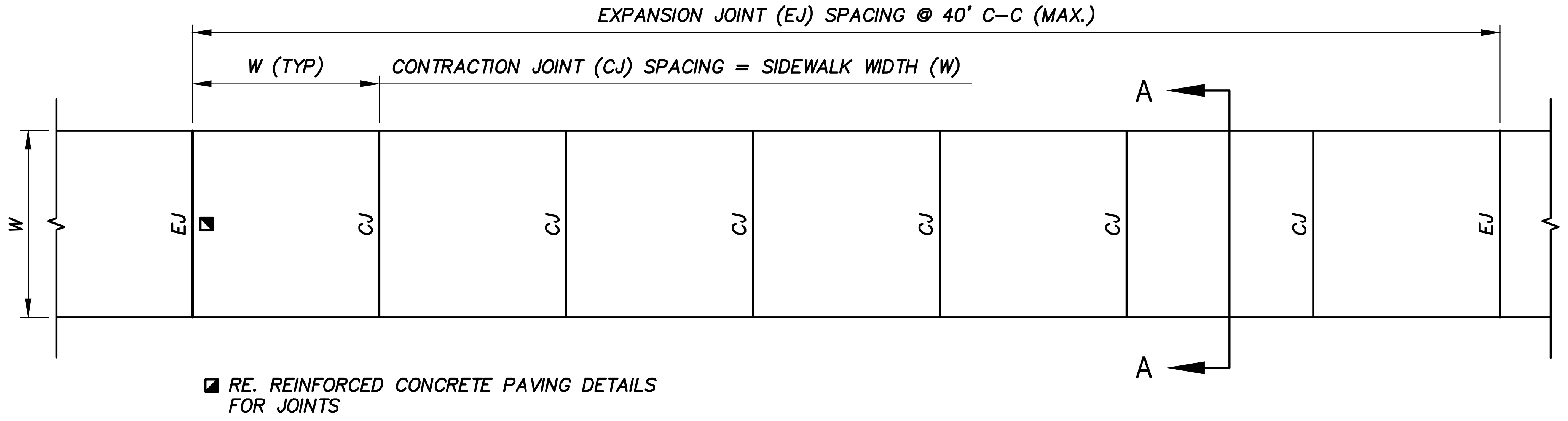

1'–0"
18'–0"
1'–0"
9'–0"
2%
2%
#3'S @ 18" O.C.E.W.
4" COARSE AGGREGATE TYPE A3 (ROAD GRAVEL); COMPACTED (SECTION 32 05 16)
8" CONCRETE PAVING: CLASS "P" (SECTION 32 30 00)

NOTES:

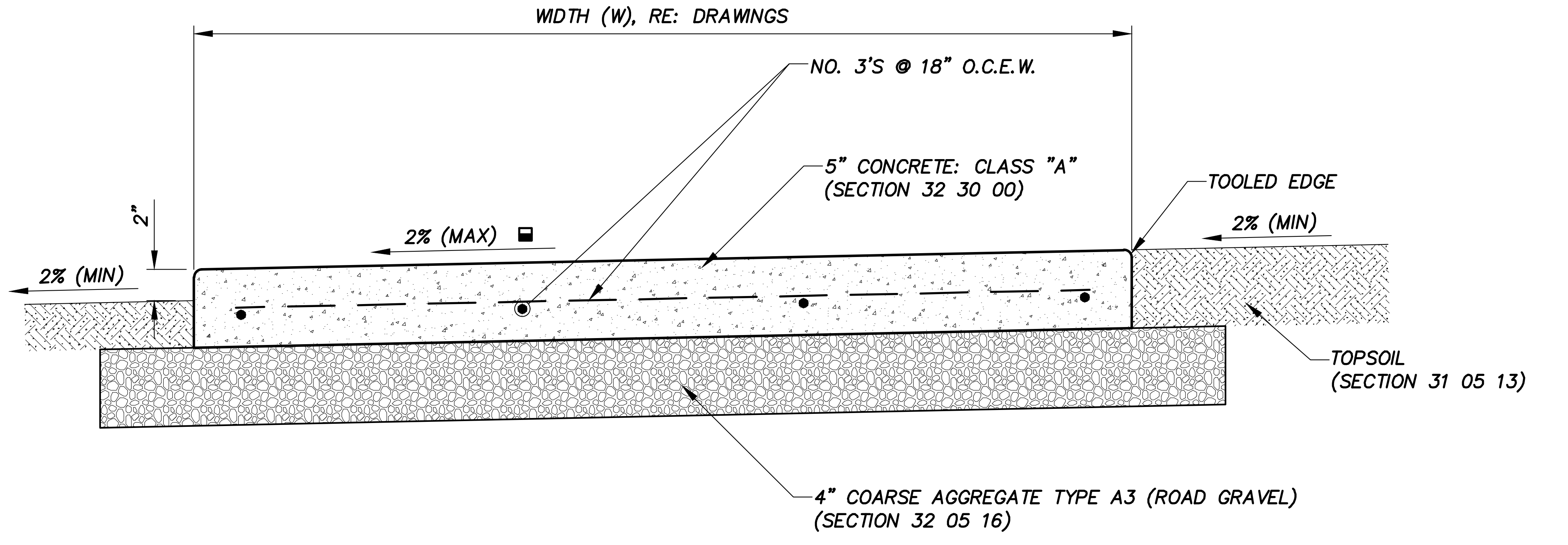
1. EXPANSION JOINT (E.J.) INTERVALS SHALL NOT EXCEED 40' C–C.
2. CONTRACTION JOINT (C.J.) INTERVALS SHALL NOT EXCEED 10' C–C.

2142 TYPICAL ALLEY SECTION

N.T.S.


EXPANSION JOINT (EJ) SPACING @ 40' C–C (MAX.)
W (TYP)
CONTRACTION JOINT (CJ) SPACING = SIDEWALK WIDTH (W)
A
A
W
EJ
CJ
CJ
CJ
CJ
CJ
CJ
EJ
◪ RE. REINFORCED CONCRETE PAVING DETAILS FOR JOINTS

PLAN

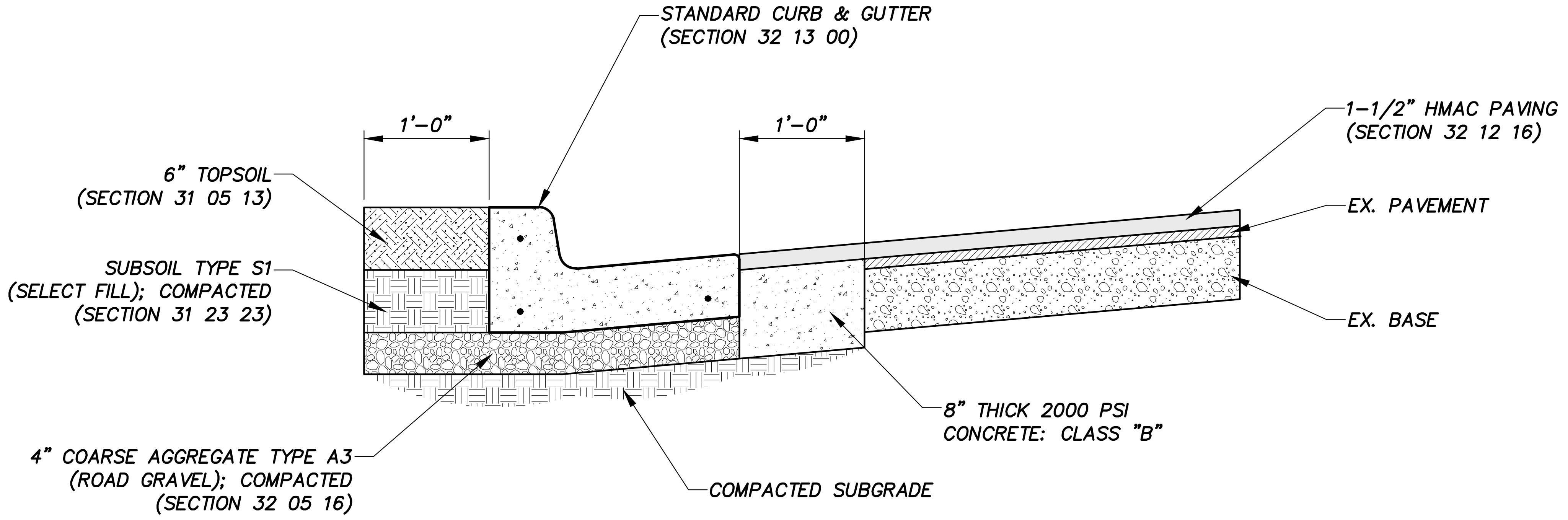

WIDTH (W), RE: DRAWINGS
NO. 3'S @ 18" O.C.E.W.
5" CONCRETE: CLASS "A" (SECTION 32 30 00)
TOOLED EDGE
2% (MIN)
2"
2% (MAX) ⬓
2% (MIN)
TOPSOIL (SECTION 31 05 13)
4" COARSE AGGREGATE TYPE A3 (ROAD GRAVEL) (SECTION 32 05 16)

SECTION A-A

⬓ RE: DRAWINGS FOR SLOPE DIRECTION

2240 SIDEWALK

N.T.S.


STANDARD CURB & GUTTER (SECTION 32 13 00)
1'–0"
1'–0"
1–1/2" HMAC PAVING (SECTION 32 12 16)
6" TOPSOIL (SECTION 31 05 13)
EX. PAVEMENT
SUBSOIL TYPE S1 (SELECT FILL); COMPACTED (SECTION 31 23 23)
EX. BASE
8" THICK 2000 PSI CONCRETE: CLASS "B"
4" COARSE AGGREGATE TYPE A3 (ROAD GRAVEL); COMPACTED (SECTION 32 05 16)
COMPACTED SUBGRADE

2280 CURB AND GUTTER IN EXISTING PAVEMENT

N.T.S.

REV.	DESCRIPTION	DATE
1	2240-SIDEWALK	6-20-18

CITY OF
ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

SIDEWALK AND MISCELLANEOUS DETAILS

6-1-2020
DATE

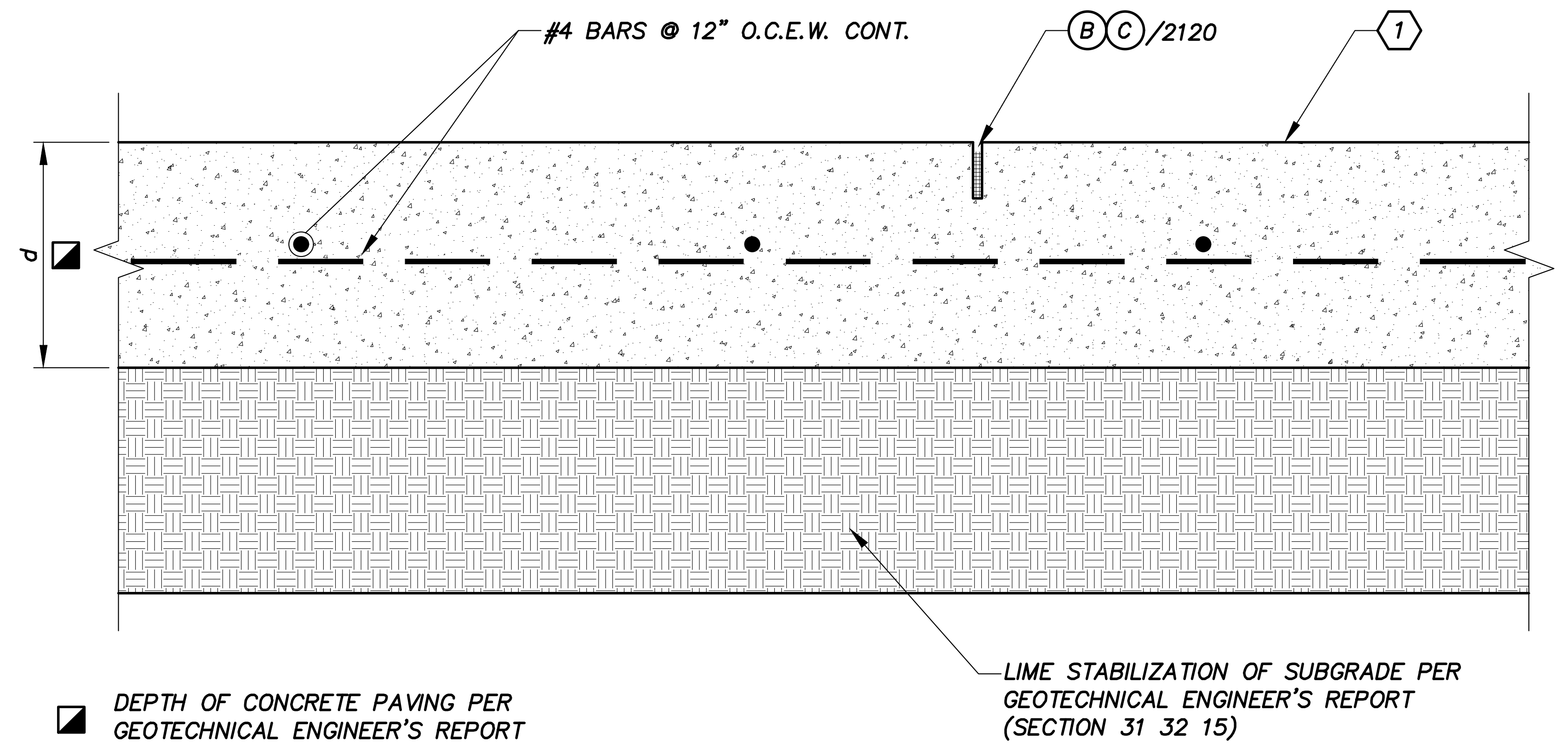
George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-003

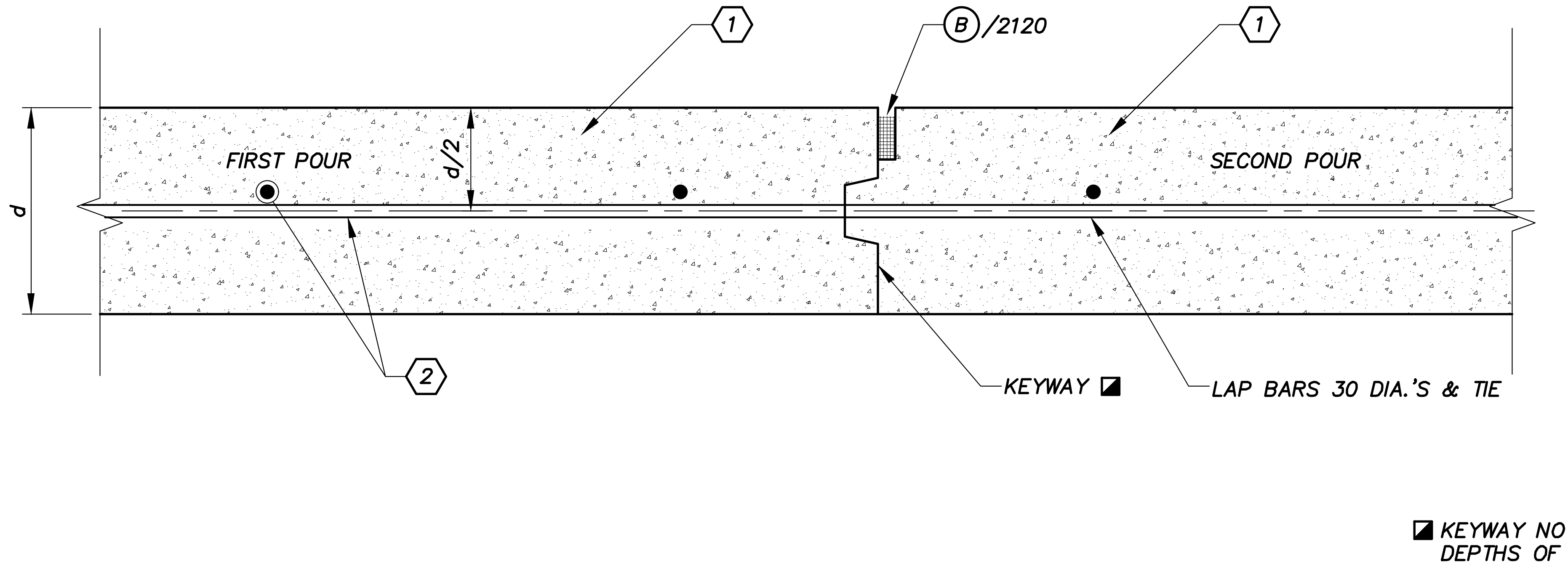
G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD PAVING DETAILS.DWG, 2-003 SIDEWALK AND MISCELLANEOUS DETAILS, 6/2/2020 10:20:04 AM, achilds

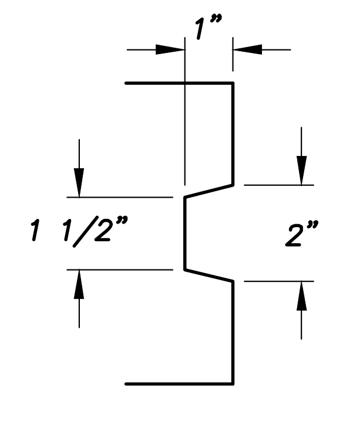

#4 BARS @ 12" O.C.E.W. CONT.
B C /2120
1
d
LIME STABILIZATION OF SUBGRADE PER GEOTECHNICAL ENGINEER'S REPORT (SECTION 31 32 15)

◪ DEPTH OF CONCRETE PAVING PER GEOTECHNICAL ENGINEER'S REPORT

2070 TYPICAL P.C. CONCRETE PAVEMENT SECTION

N.T.S.



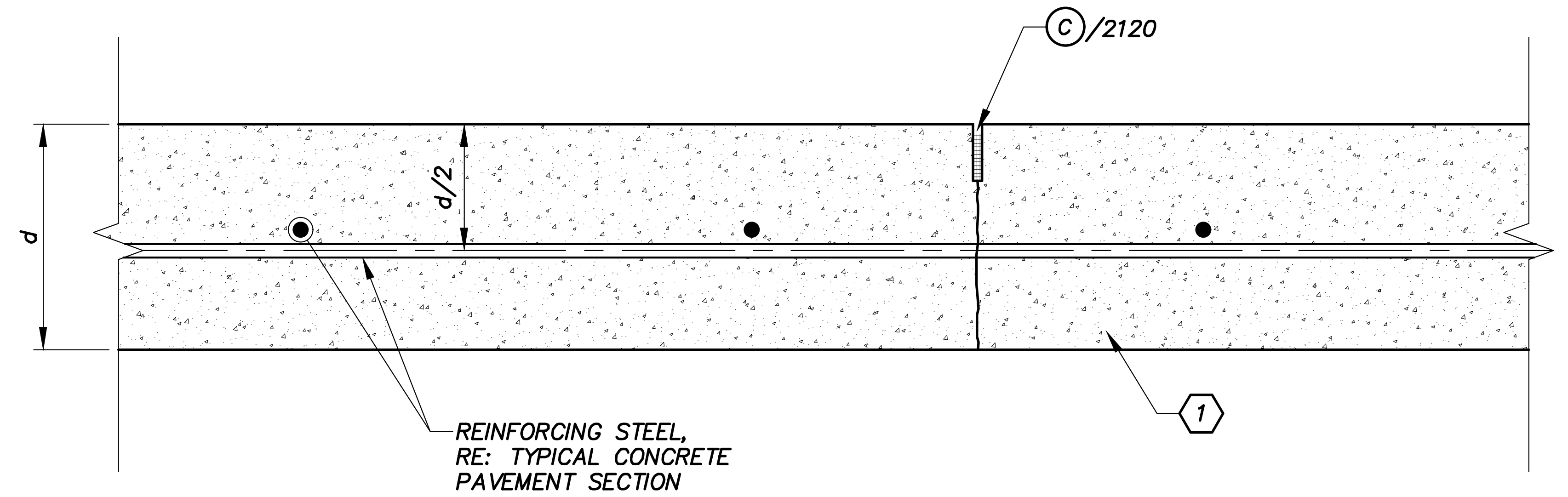


KEYWAY

◪ KEYWAY NOT REQUIRED ON PAVEMENT DEPTHS OF 5 INCHES OR LESS.

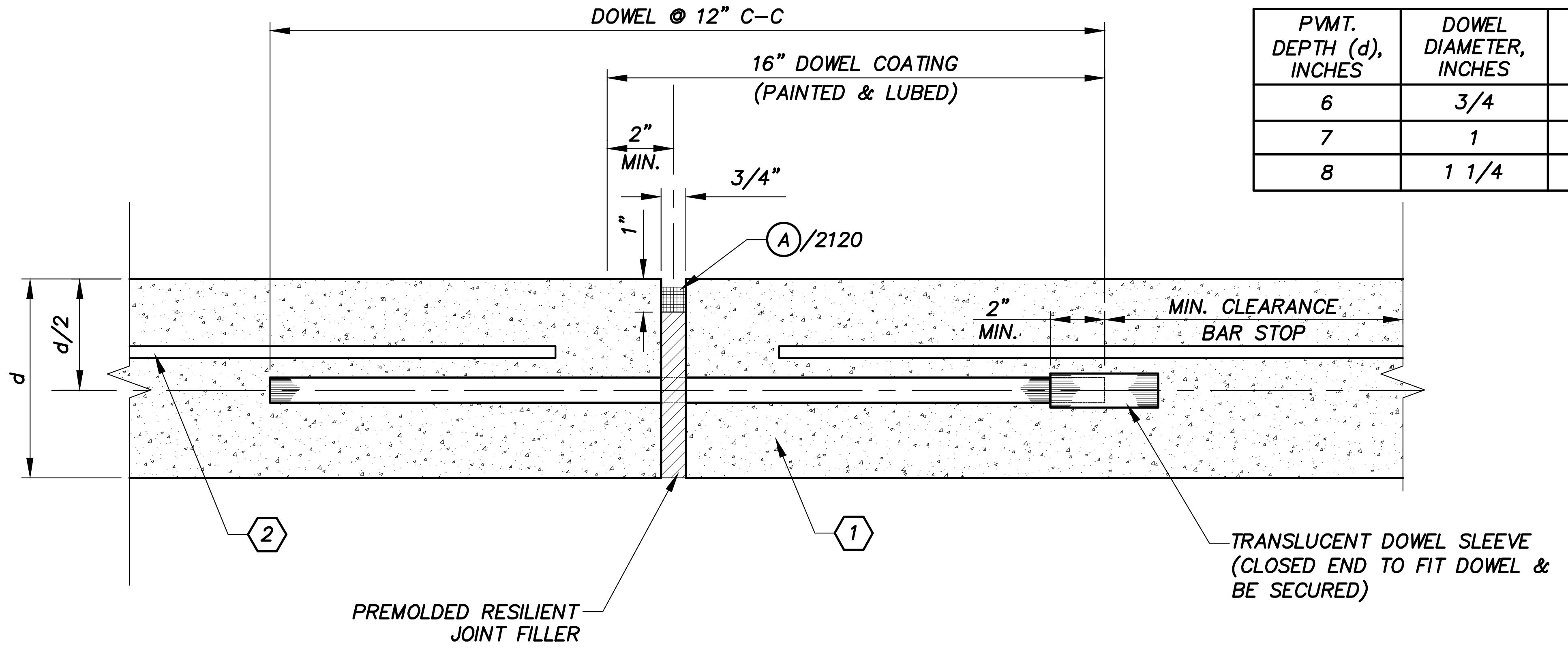
2100 CONSTRUCTION JOINT

N.T.S.



2080 SAWED CONTRACTION JOINT

N.T.S.

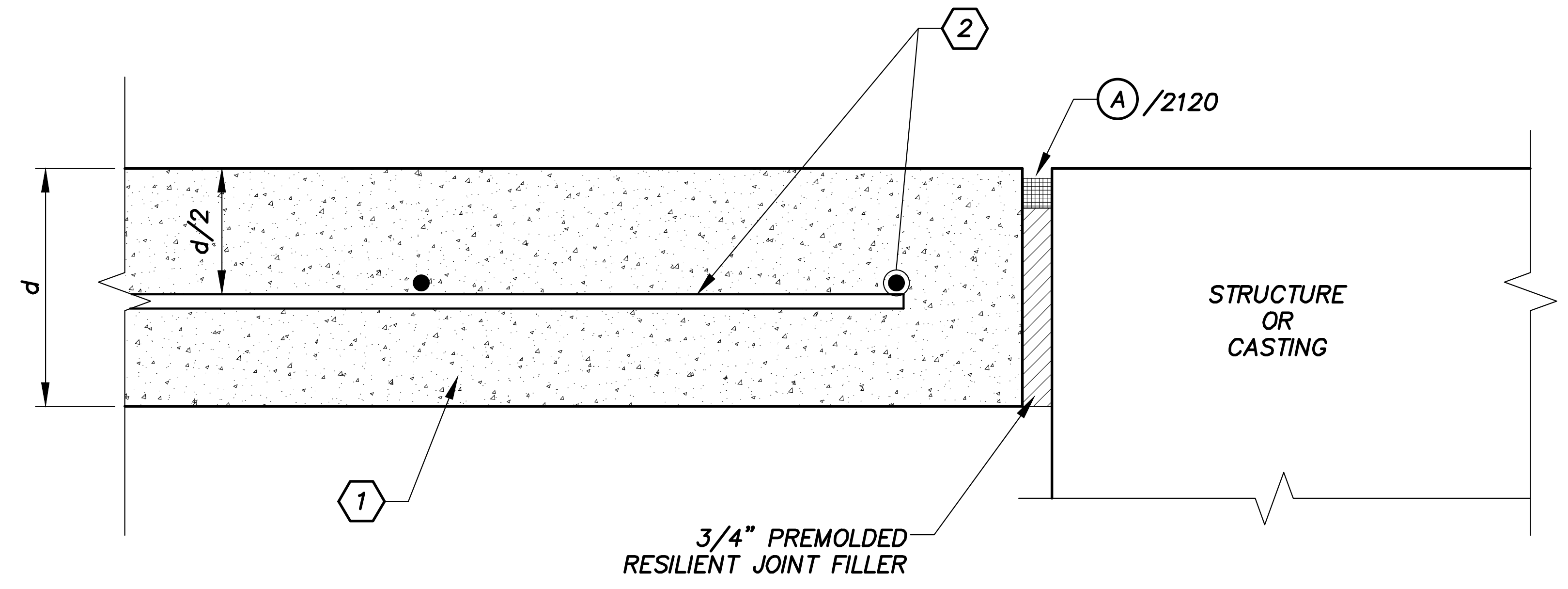

DOWEL @ 12" C-C
16" DOWEL COATING (PAINTED & LUBED)
2" MIN.
3/4"
1"
A /2120
2" MIN.
MIN. CLEARANCE BAR STOP
d/2
d
2
1
PREMOLDED RESILIENT JOINT FILLER
TRANSLUCENT DOWEL SLEEVE (CLOSED END TO FIT DOWEL & BE SECURED)

PVMT. DEPTH (d), INCHES	DOWEL DIAMETER, INCHES	DOWEL LENGTH, INCHES
6	3/4	14
7	1	16
8	1 1/4	18

NOTES: 1. DOWEL SUPPORT SHALL BE OF A METHOD APPROVED BY ENGINEER.
2. REINFORCING STEEL SHALL STOP 3" ON EITHER SIDE OF JOINT.

2110 EXPANSION JOINT

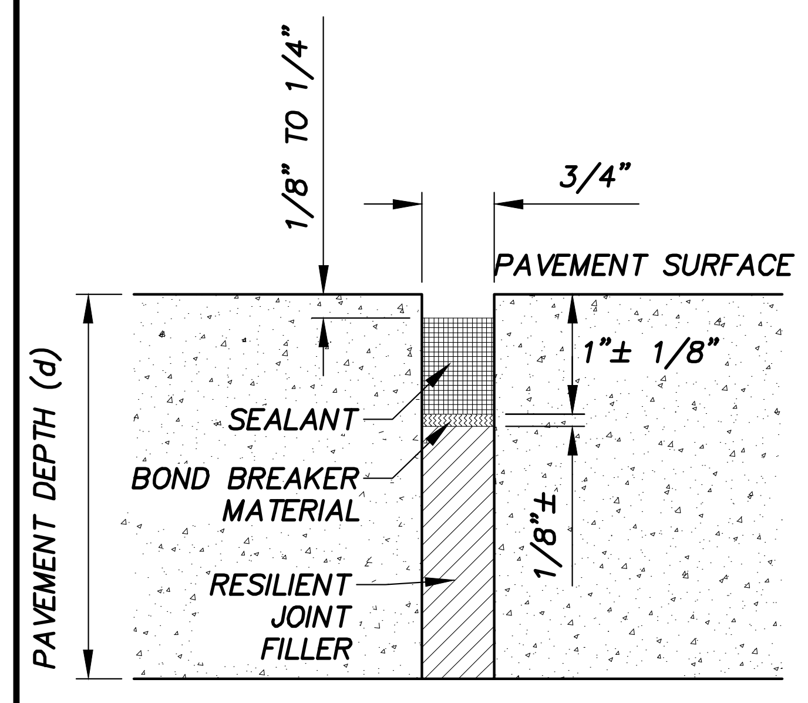
N.T.S.



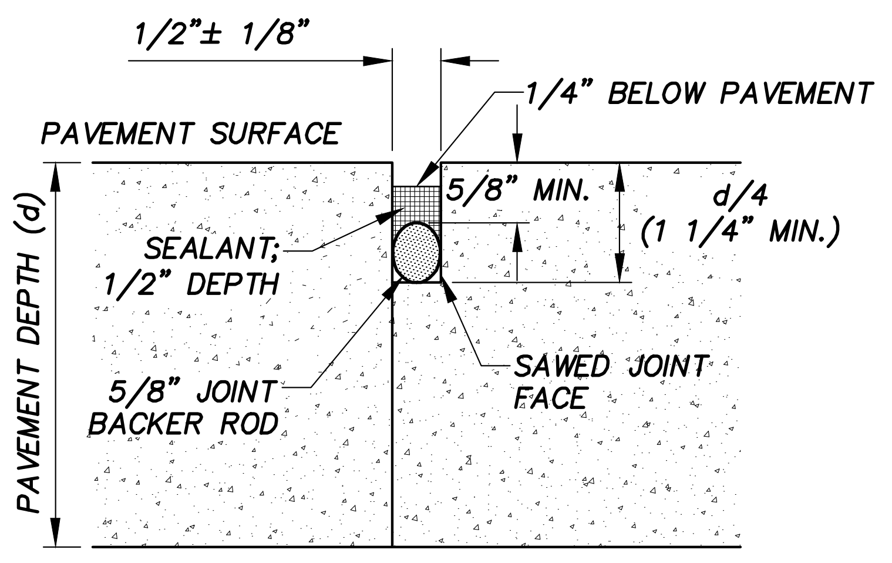
NOTE: REINFORCING STEEL SHALL STOP 3" FROM JOINT.

2090 ISOLATION JOINT

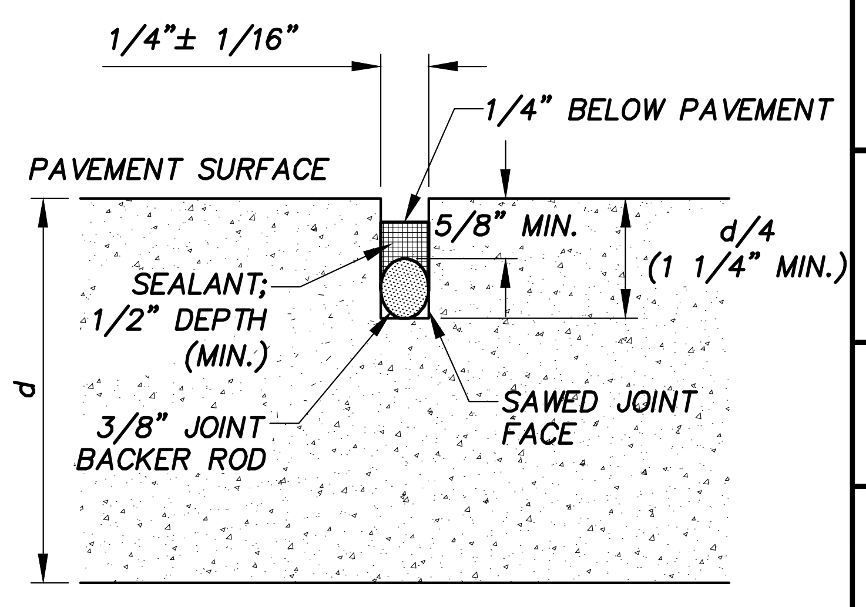
N.T.S.



Ⓐ EXPANSION JOINTS



Ⓑ CONSTRUCTION JOINTS



Ⓒ CONTRACTION JOINTS

2120 DETAILS OF JOINTS IN RIGID PAVEMENT

N.T.S.

SPECIAL NOTES FOR REINFORCED CONCRETE PAVING

1. ALL REINFORCED CONCRETE PAVING SHALL BE CLASS "P" AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 13 13.
2. ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 13 13.
3. ALL REINFORCING SIZING AND SPACING SHALL BE INDICATED ON THE "TYPICAL SECTION."
4. INTEGRAL CONCRETE CURB AND/OR CONCRETE CURB AND GUTTER SHALL BE THE SAME MIX DESIGN AND COMPRESSIVE STRENGH AS THE CONCRETE PAVING
5. EXPANSION JOINTS SHALL BE SPACED AT 600' C-C (MAXIMUM) AND AT ALL STRUCTURES, INTERSECTIONS, P.C.'S & P.T.'S
6. LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT SHALL BE THE WIDTH OF EACH LANE, BUT SHALL NOT EXCEED 15' C-C

LEGEND

▦	SEALANT
▤	BOND BREAKER MATERIAL
▨	PREMOLDED RESILIENT JOINT FILLER
▒	JOINT BACKER ROD MATERIAL (CLOSED CELL RESILIENT FOAM OR SPONGE RUBBER)

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

REINFORCED CONCRETE PAVING DETAILS

6-1-2020
DATE

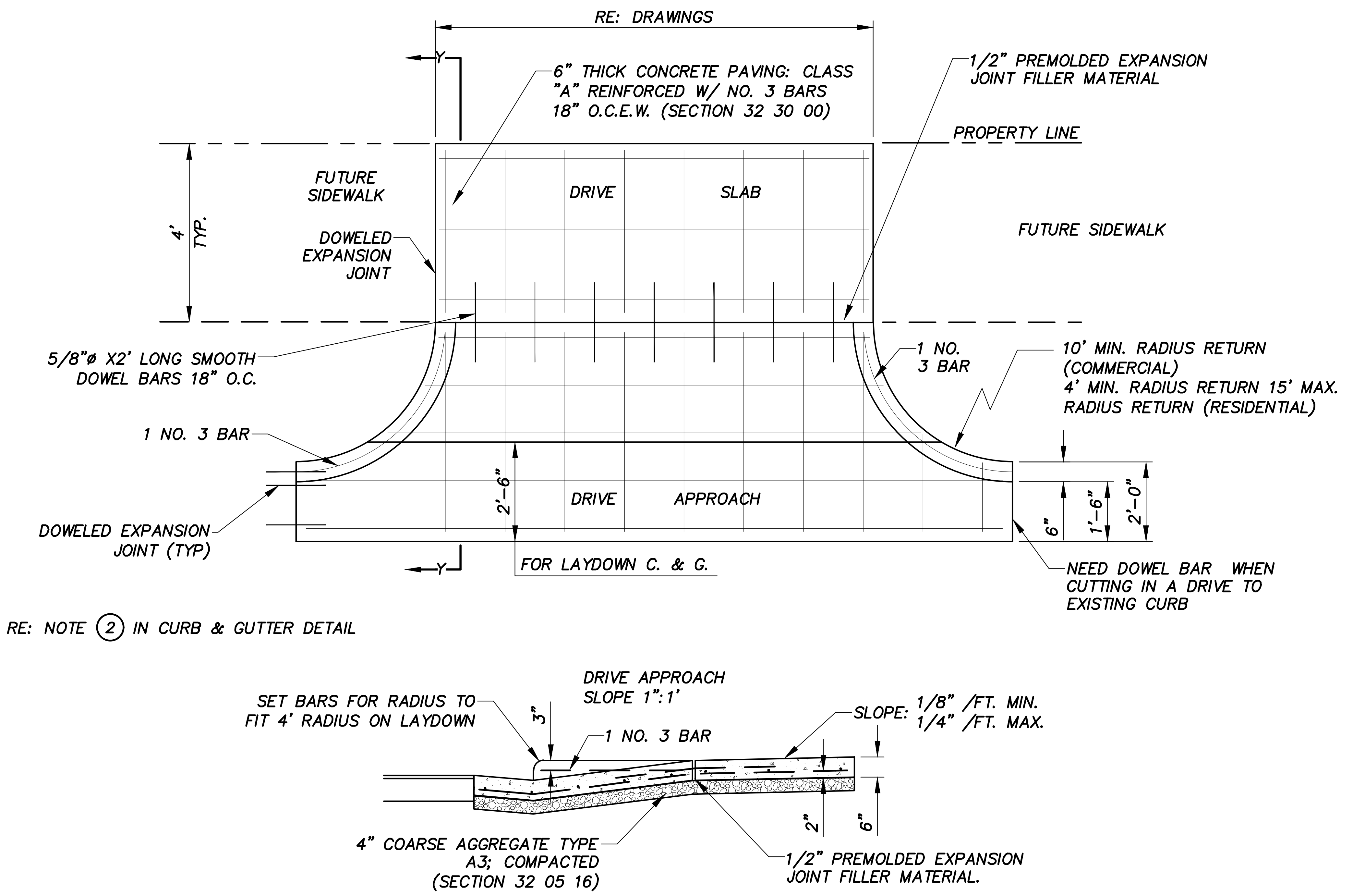
George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-004

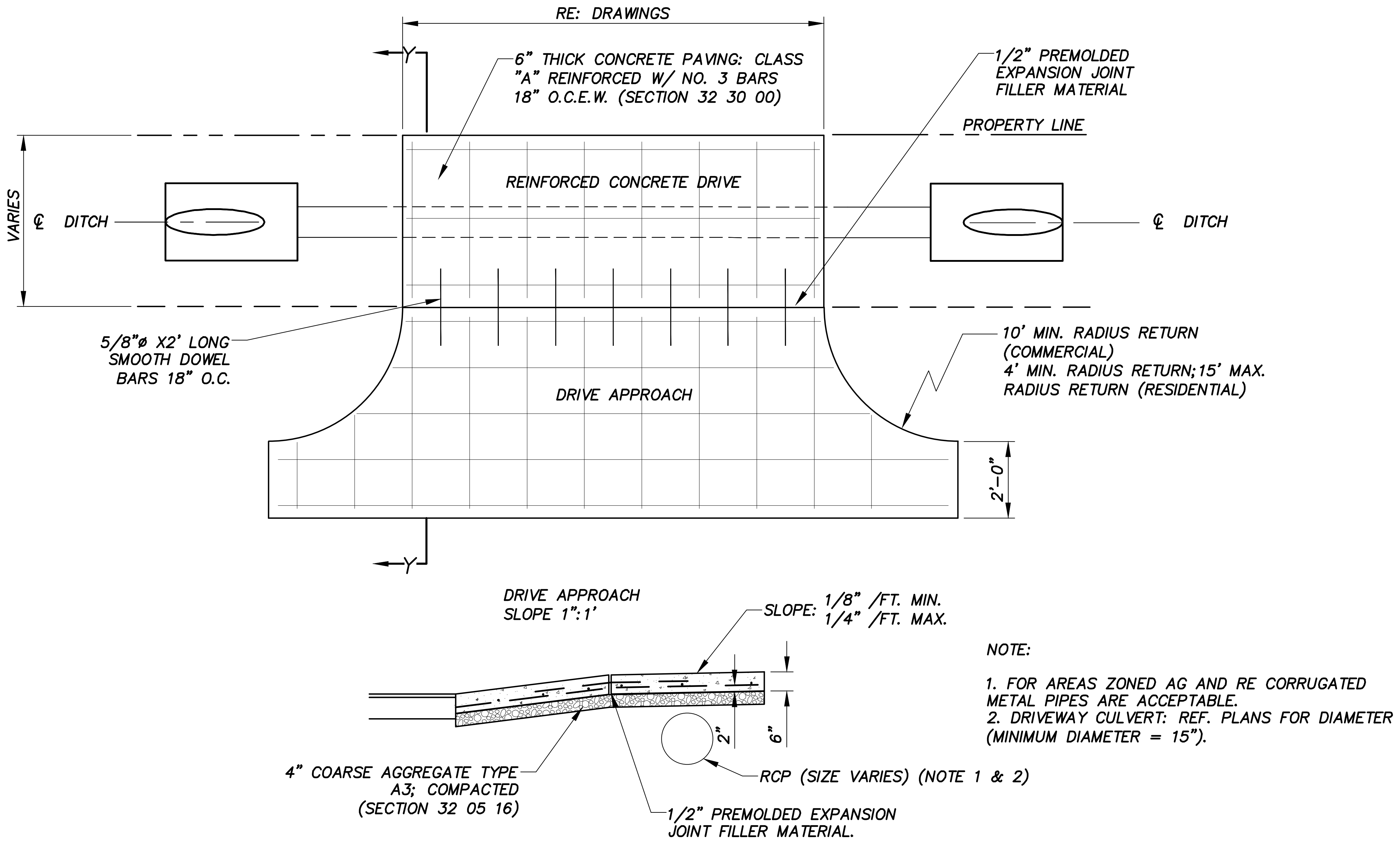
G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD PAVING DETAILS\2-004 REINFORCED CONCRETE PAVING DETAILS.DWG, 6/2/2020 10:20:07 AM, achilds


RE: DRAWINGS
6" THICK CONCRETE PAVING: CLASS "A" REINFORCED W/ NO. 3 BARS 18" O.C.E.W. (SECTION 32 30 00)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL
PROPERTY LINE
FUTURE SIDEWALK
DOWELED EXPANSION JOINT
4' TYP.
DRIVE SLAB
FUTURE SIDEWALK
5/8"ø X2' LONG SMOOTH DOWEL BARS 18" O.C.
1 NO. 3 BAR
1 NO. 3 BAR
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
2'-6"
DRIVE APPROACH
DOWELED EXPANSION JOINT (TYP)
6"
1'-6"
2'-0"
FOR LAYDOWN C. & G.
NEED DOWEL BAR WHEN CUTTING IN A DRIVE TO EXISTING CURB
Y
RE: NOTE ② IN CURB & GUTTER DETAIL
DRIVE APPROACH SLOPE 1":1'
SET BARS FOR RADIUS TO FIT 4' RADIUS ON LAYDOWN
3"
1 NO. 3 BAR
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
2"
6"
4" COARSE AGGREGATE TYPE A3; COMPACTED (SECTION 32 05 16)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL.

SECTION Y-Y STANDARD DRIVE APPROACH

2130 STANDARD DRIVE APPROACH (URBAN / CURB & GUTTER) (CONCRETE TYPE 1)

N.T.S.


RE: DRAWINGS
6" THICK CONCRETE PAVING: CLASS "A" REINFORCED W/ NO. 3 BARS 18" O.C.E.W. (SECTION 32 30 00)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL
PROPERTY LINE
REINFORCED CONCRETE DRIVE
VARIES
℄ DITCH
℄ DITCH
5/8"ø X2' LONG SMOOTH DOWEL BARS 18" O.C.
DRIVE APPROACH
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN;15' MAX. RADIUS RETURN (RESIDENTIAL)
2'-0"
Y
DRIVE APPROACH SLOPE 1":1'
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
2"
6"
4" COARSE AGGREGATE TYPE A3; COMPACTED (SECTION 32 05 16)
RCP (SIZE VARIES) (NOTE 1 & 2)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL.

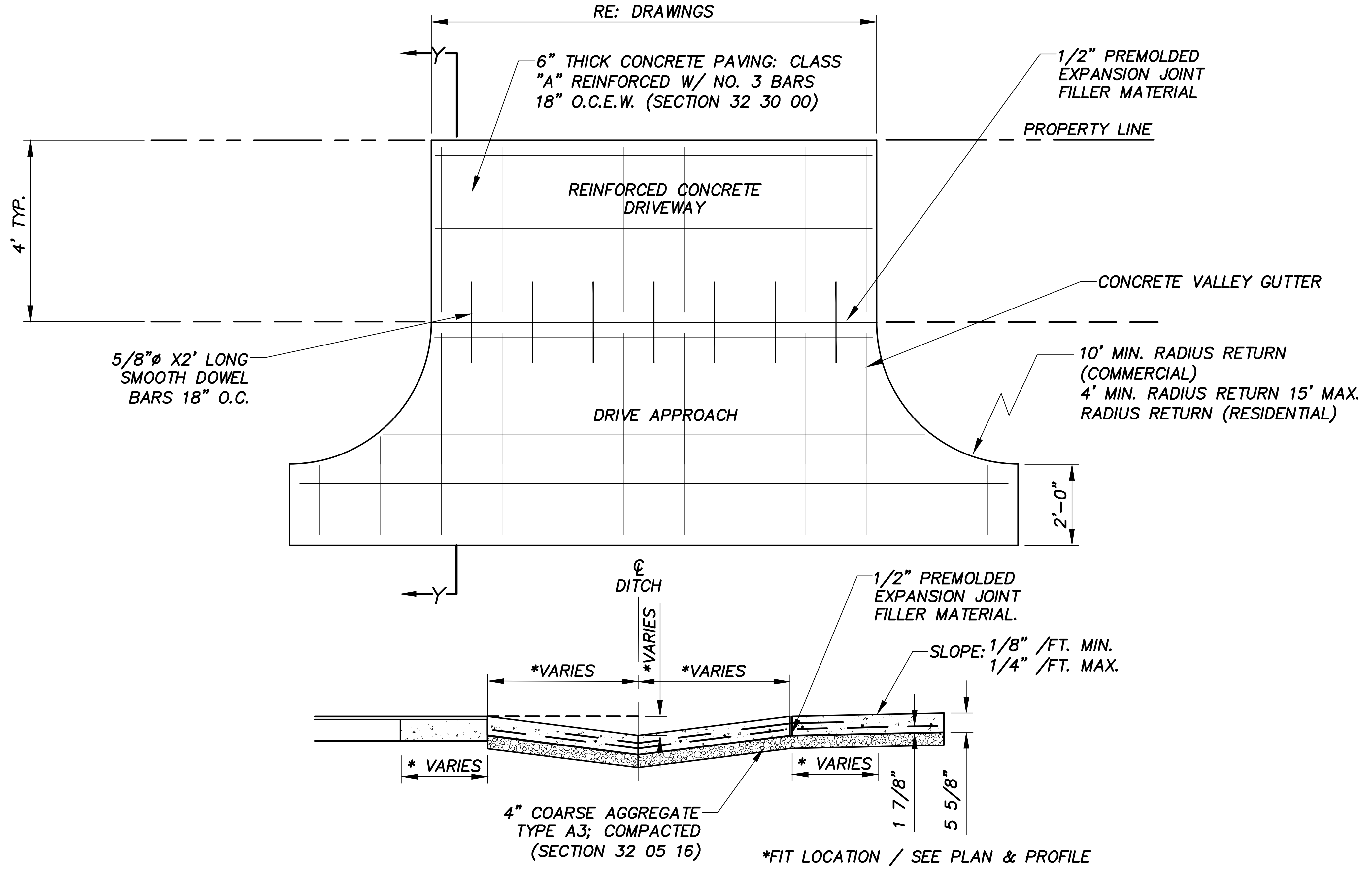
NOTE:

1. FOR AREAS ZONED AG AND RE CORRUGATED METAL PIPES ARE ACCEPTABLE.
2. DRIVEWAY CULVERT: REF. PLANS FOR DIAMETER (MINIMUM DIAMETER = 15").

SECTION Y-Y STANDARD DRIVE APPROACH

2131 STANDARD DRIVE APPROACH (RURAL) (CONCRETE TYPE 2)

N.T.S.


RE: DRAWINGS
6" THICK CONCRETE PAVING: CLASS "A" REINFORCED W/ NO. 3 BARS 18" O.C.E.W. (SECTION 32 30 00)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL
PROPERTY LINE
4' TYP.
REINFORCED CONCRETE DRIVEWAY
CONCRETE VALLEY GUTTER
5/8"ø X2' LONG SMOOTH DOWEL BARS 18" O.C.
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
DRIVE APPROACH
2'-0"
Y
℄ DITCH
*VARIES
*VARIES
*VARIES
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL.
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
* VARIES
* VARIES
1 7/8"
5 5/8"
4" COARSE AGGREGATE TYPE A3; COMPACTED (SECTION 32 05 16)
*FIT LOCATION / SEE PLAN & PROFILE

SECTION Y-Y STANDARD DRIVE APPROACH

2132 STANDARD DRIVE APPROACH W/ VALLEY GUTTER (RURAL) (CONCRETE TYPE 3)

N.T.S.

REV.	DESCRIPTION	DATE
1	2131-STANDARD DRIVE	10-15-18

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR
PUBLIC INFRASTRUCTURE

CONCRETE DRIVE APPROACH

6-1-2020
DATE

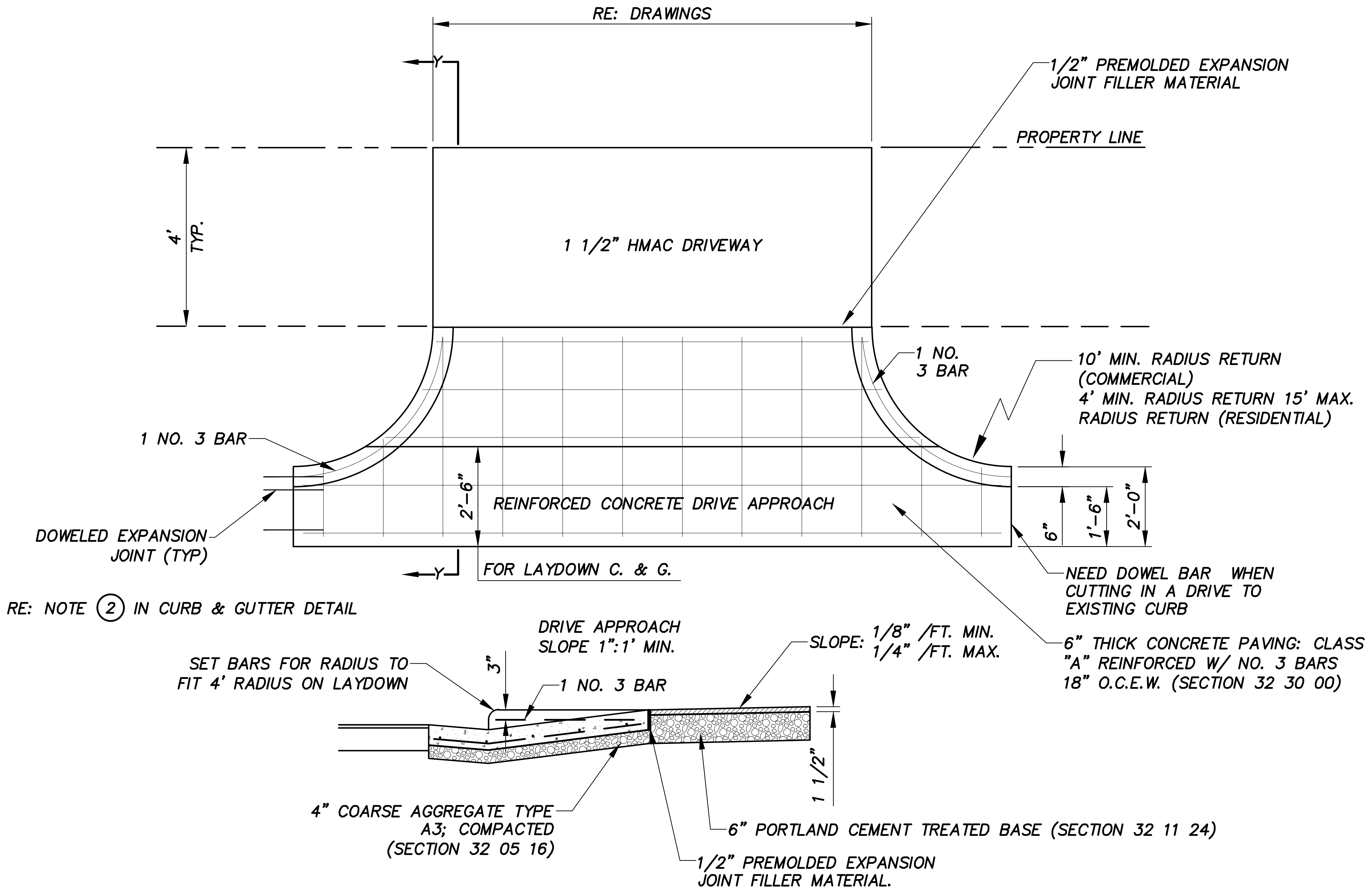
George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
2-005

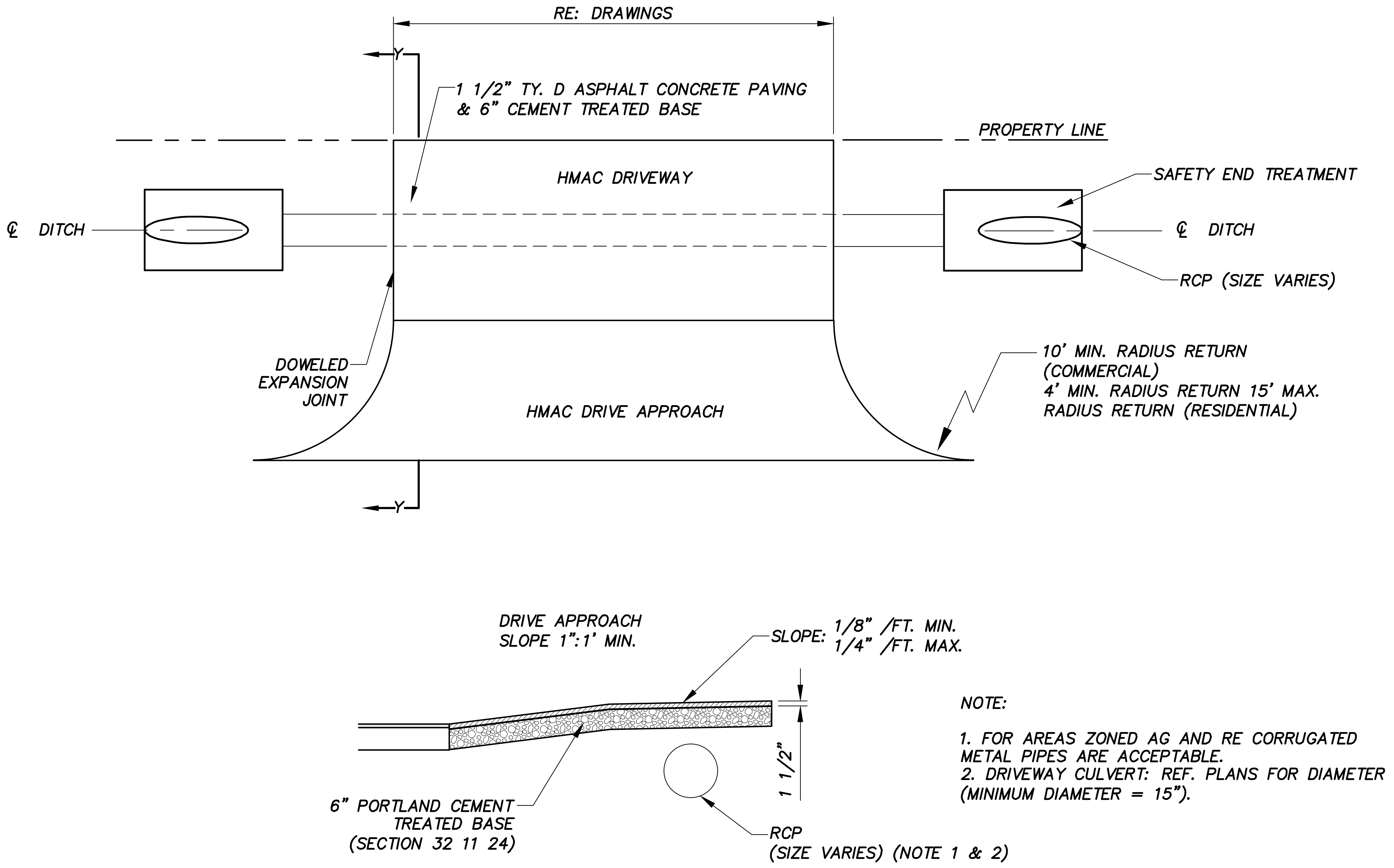
G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD PAVING DETAILS.DWG, 2-005 CONCRETE DRIVE APPROACH, 6/2/2020 10:20:09 AM, achilds


RE: DRAWINGS
Y
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL
PROPERTY LINE
4' TYP.
1 1/2" HMAC DRIVEWAY
1 NO. 3 BAR
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
1 NO. 3 BAR
2'-6"
REINFORCED CONCRETE DRIVE APPROACH
6"
1'-6"
2'-0"
DOWELED EXPANSION JOINT (TYP)
Y
FOR LAYDOWN C. & G.
NEED DOWEL BAR WHEN CUTTING IN A DRIVE TO EXISTING CURB
RE: NOTE ② IN CURB & GUTTER DETAIL
DRIVE APPROACH SLOPE 1":1' MIN.
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
6" THICK CONCRETE PAVING: CLASS "A" REINFORCED W/ NO. 3 BARS 18" O.C.E.W. (SECTION 32 30 00)
SET BARS FOR RADIUS TO FIT 4' RADIUS ON LAYDOWN
3"
1 NO. 3 BAR
1 1/2"
4" COARSE AGGREGATE TYPE A3; COMPACTED (SECTION 32 05 16)
6" PORTLAND CEMENT TREATED BASE (SECTION 32 11 24)
1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL.

SECTION Y-Y STANDARD DRIVE APPROACH

2133 STANDARD DRIVE APPROACH (URBAN / CURB & GUTTER) (HMAC TYPE 1)

1" = 1'-0"


RE: DRAWINGS
Y
1 1/2" TY. D ASPHALT CONCRETE PAVING & 6" CEMENT TREATED BASE
PROPERTY LINE
HMAC DRIVEWAY
SAFETY END TREATMENT
℄ DITCH
℄ DITCH
RCP (SIZE VARIES)
DOWELED EXPANSION JOINT
HMAC DRIVE APPROACH
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
Y
DRIVE APPROACH SLOPE 1":1' MIN.
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
1 1/2"
6" PORTLAND CEMENT TREATED BASE (SECTION 32 11 24)
RCP (SIZE VARIES) (NOTE 1 & 2)

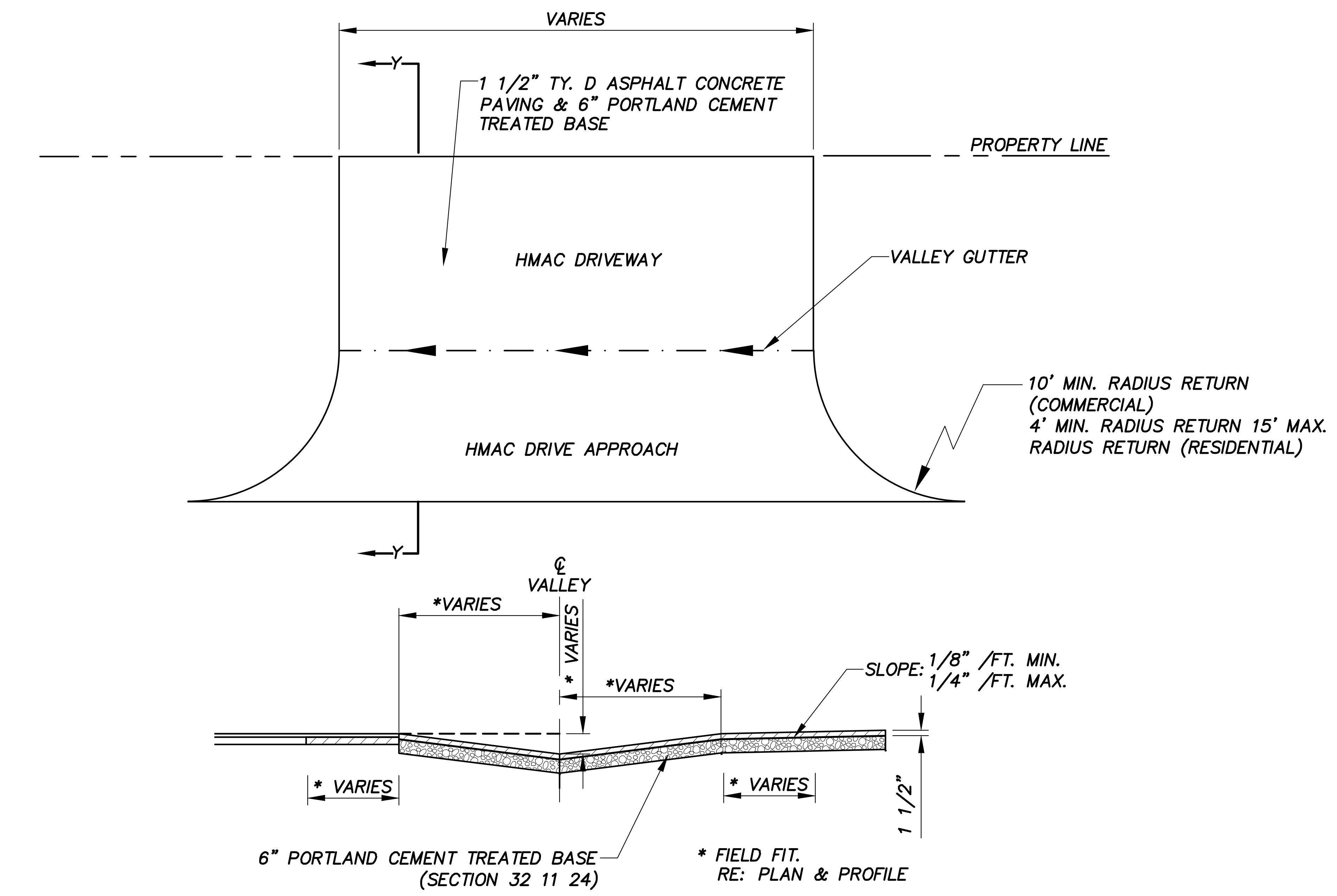
NOTE:

1. FOR AREAS ZONED AG AND RE CORRUGATED METAL PIPES ARE ACCEPTABLE.
2. DRIVEWAY CULVERT: REF. PLANS FOR DIAMETER (MINIMUM DIAMETER = 15").

SECTION Y-Y STANDARD DRIVE APPROACH

2134 STANDARD DRIVE APPROACH (RURAL) (HMAC TYPE 2)

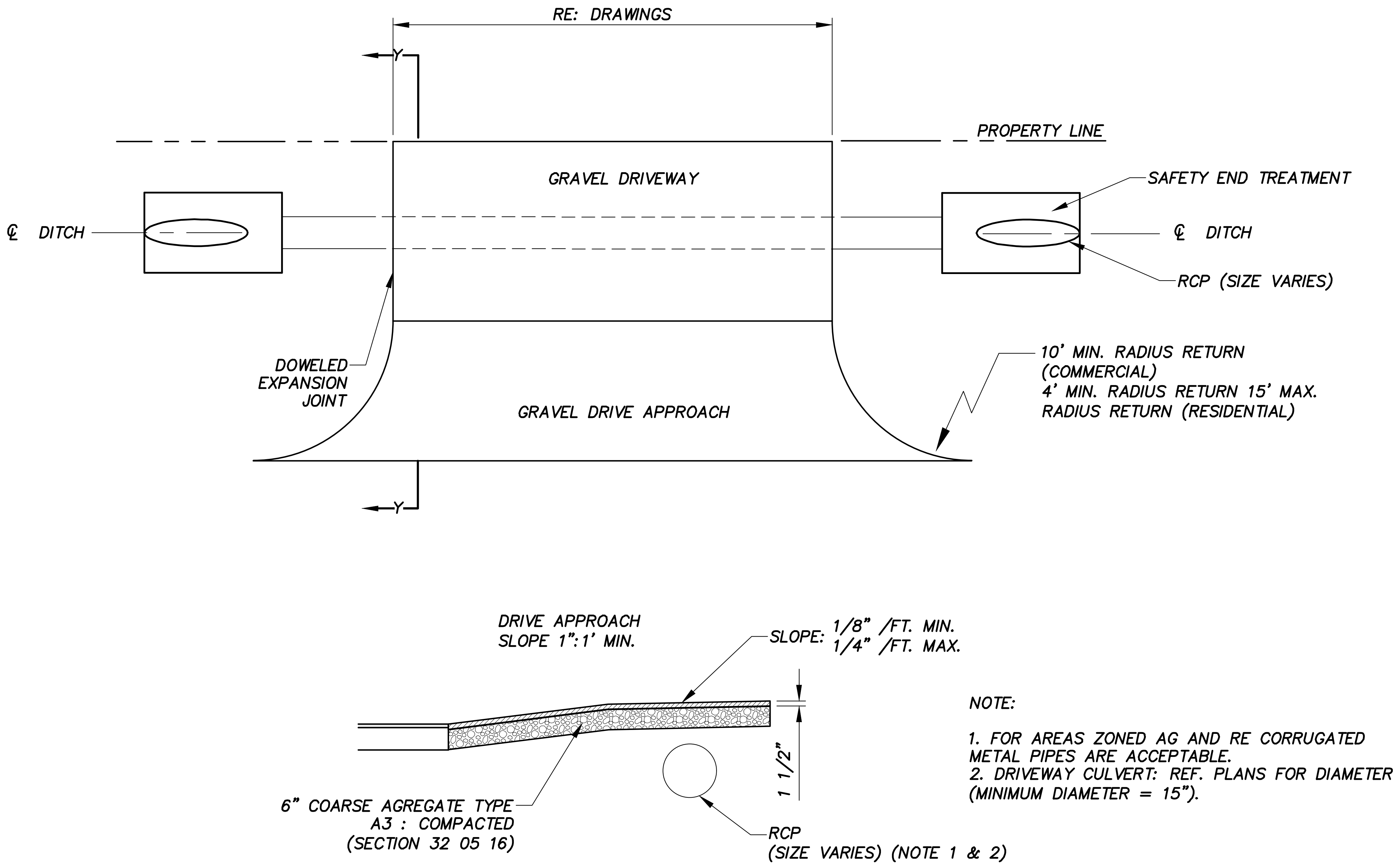
N.T.S.


VARIES
Y
1 1/2" TY. D ASPHALT CONCRETE PAVING & 6" PORTLAND CEMENT TREATED BASE
PROPERTY LINE
HMAC DRIVEWAY
VALLEY GUTTER
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
HMAC DRIVE APPROACH
Y
℄ VALLEY
*VARIES
* VARIES
*VARIES
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
* VARIES
* VARIES
1 1/2"
6" PORTLAND CEMENT TREATED BASE (SECTION 32 11 24)
* FIELD FIT. RE: PLAN & PROFILE

SECTION Y-Y STANDARD DRIVE APPROACH

2135 STANDARD DRIVE APPROACH W/ VALLEY GUTTER (RURAL) (HMAC TYPE 3)

N.T.S.


RE: DRAWINGS
Y
PROPERTY LINE
GRAVEL DRIVEWAY
SAFETY END TREATMENT
℄ DITCH
℄ DITCH
RCP (SIZE VARIES)
DOWELED EXPANSION JOINT
GRAVEL DRIVE APPROACH
10' MIN. RADIUS RETURN (COMMERCIAL)
4' MIN. RADIUS RETURN 15' MAX. RADIUS RETURN (RESIDENTIAL)
Y
DRIVE APPROACH SLOPE 1":1' MIN.
SLOPE: 1/8" /FT. MIN. 1/4" /FT. MAX.
1 1/2"
6" COARSE AGREGATE TYPE A3 : COMPACTED (SECTION 32 05 16)
RCP (SIZE VARIES) (NOTE 1 & 2)

NOTE:

1. FOR AREAS ZONED AG AND RE CORRUGATED METAL PIPES ARE ACCEPTABLE.
2. DRIVEWAY CULVERT: REF. PLANS FOR DIAMETER (MINIMUM DIAMETER = 15").

SECTION Y-Y STANDARD DRIVE APPROACH

2136 STANDARD DRIVE APPROACH (RURAL) (GRAVEL)

N.T.S.

REV.	DESCRIPTION	DATE
1	2135-STANDARD DRIVE	10-15-18
1	2134-STANDARD DRIVE	10-15-18

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

HMAC DRIVE APPROACH

6-1-2020
DATE

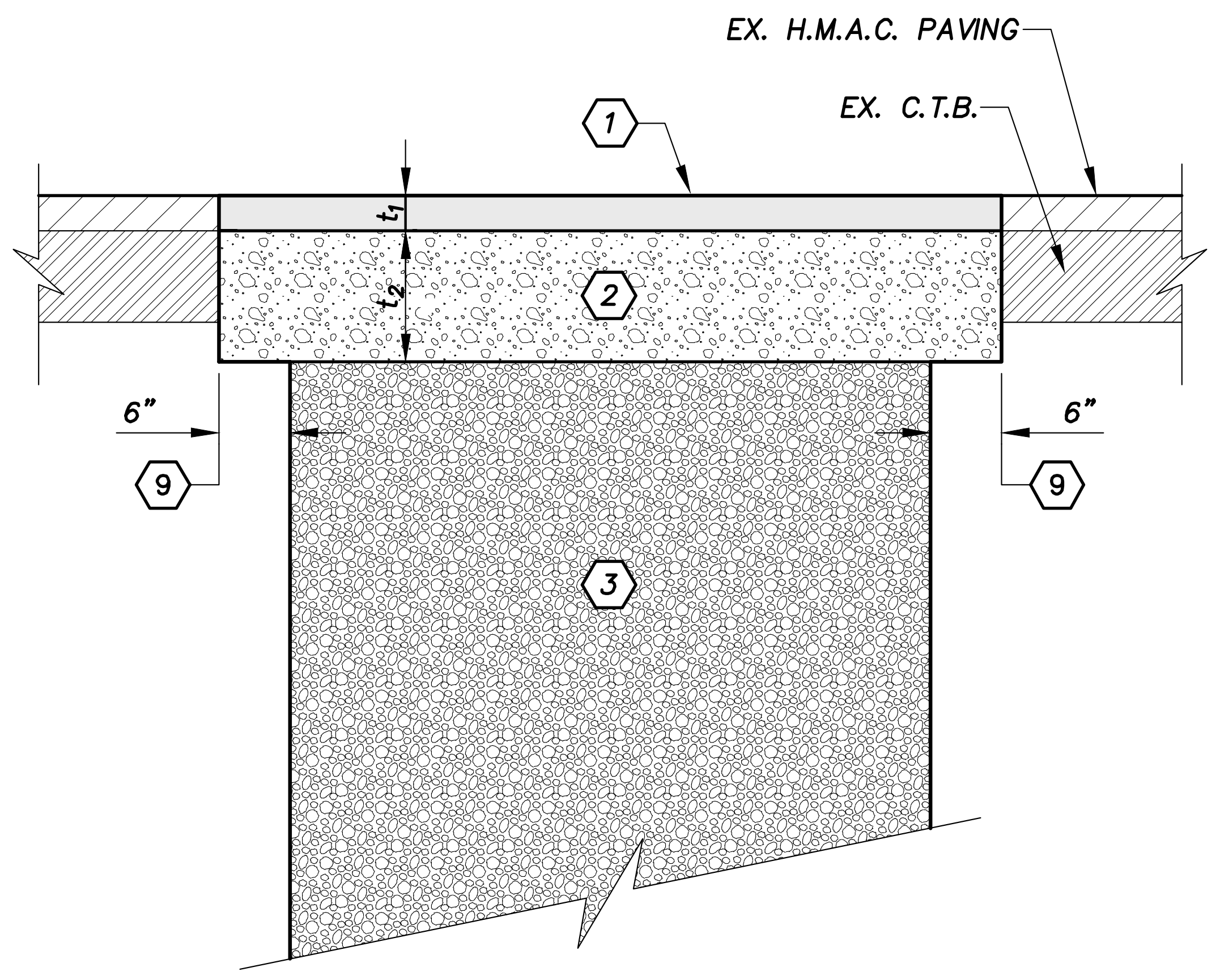
George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

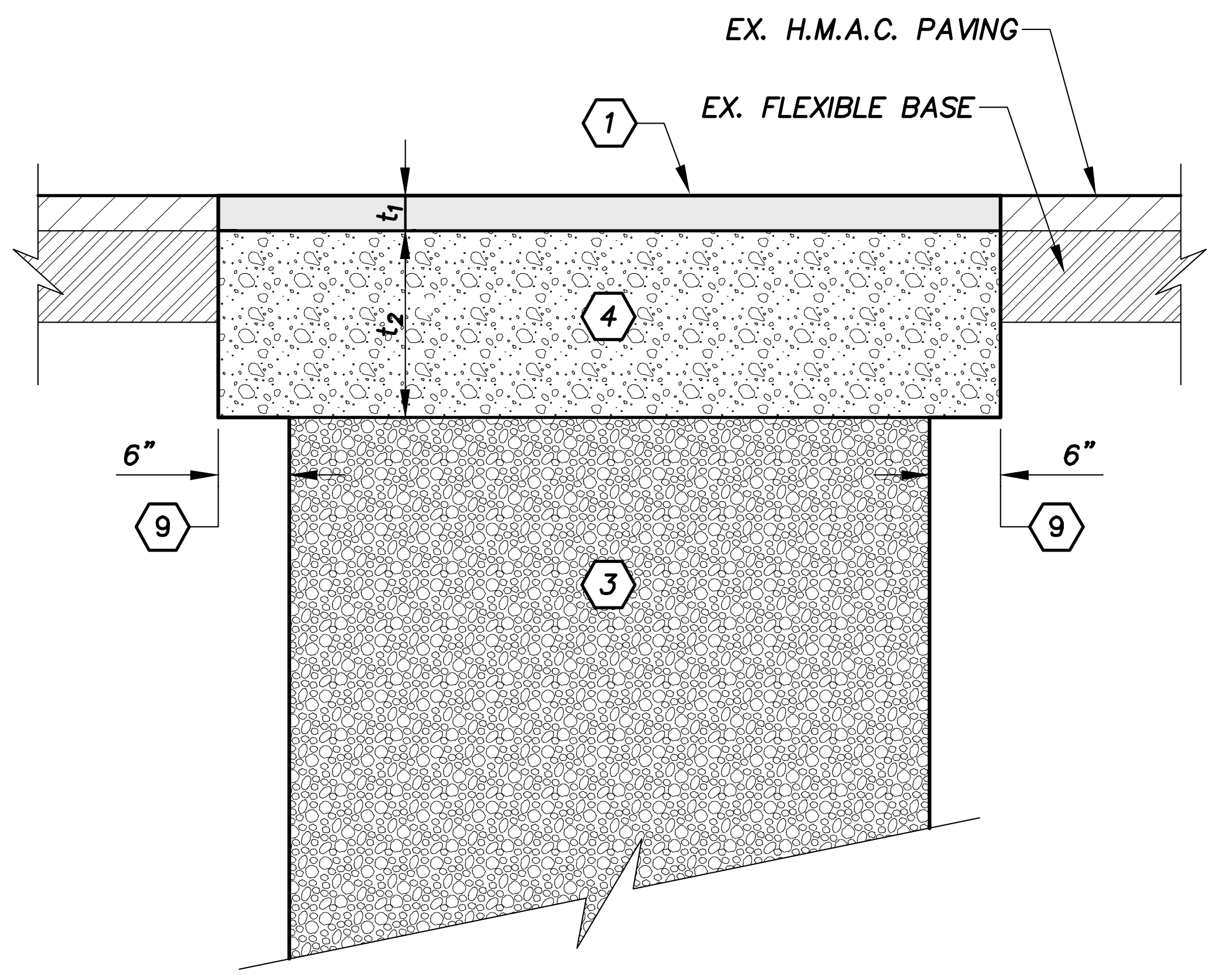
DRAWING NO.
2-006

G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD PAVING DETAILS.DWG, 2-006 HMAC DRIVE APPROACH, 6/2/2020 10:20:11 AM, achilds



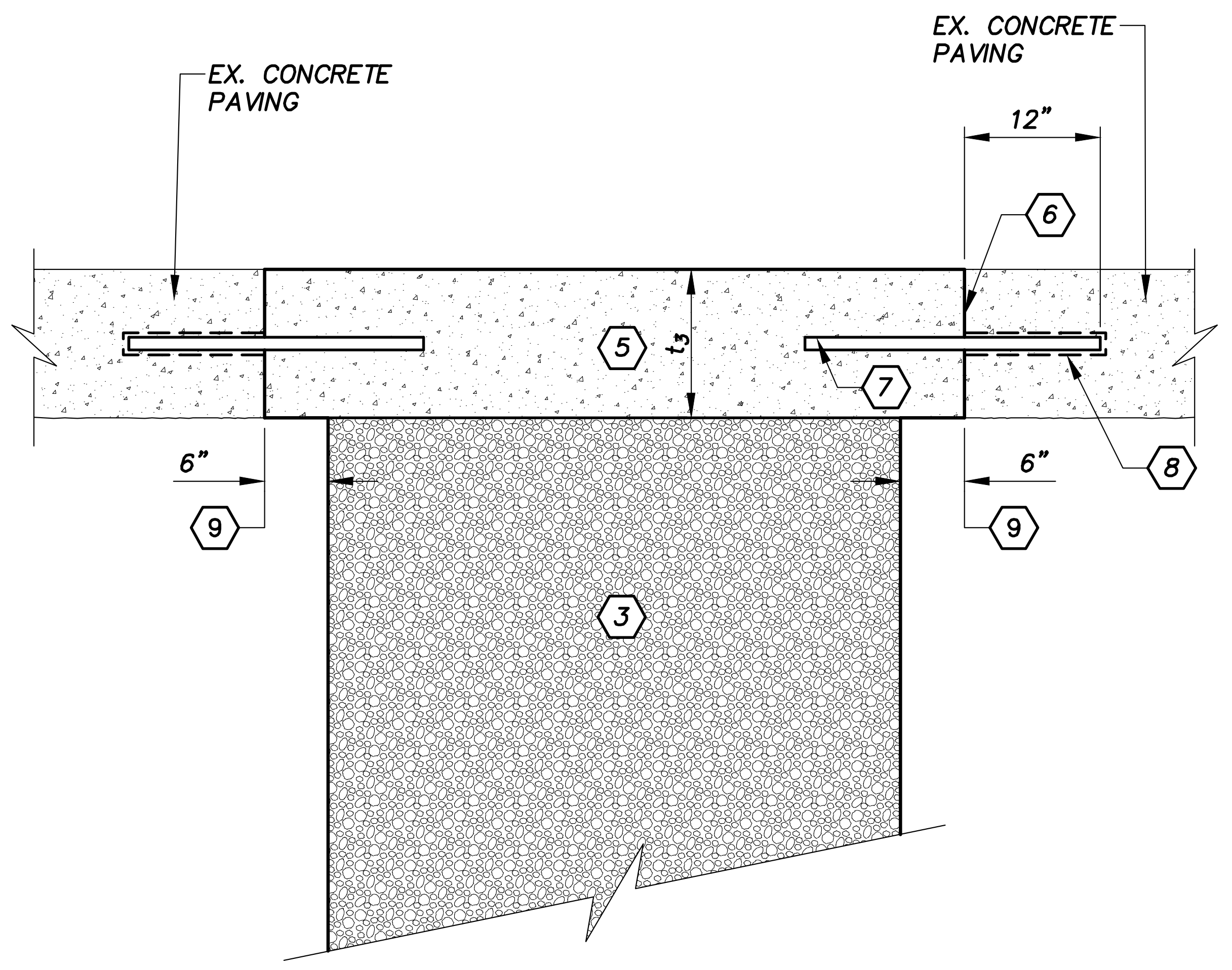
CLASS "A"

SURFACE REPLACEMENT FOR
H.M.A.C. SURFACE WITH PORTLAND
CEMENT TREATED BASE



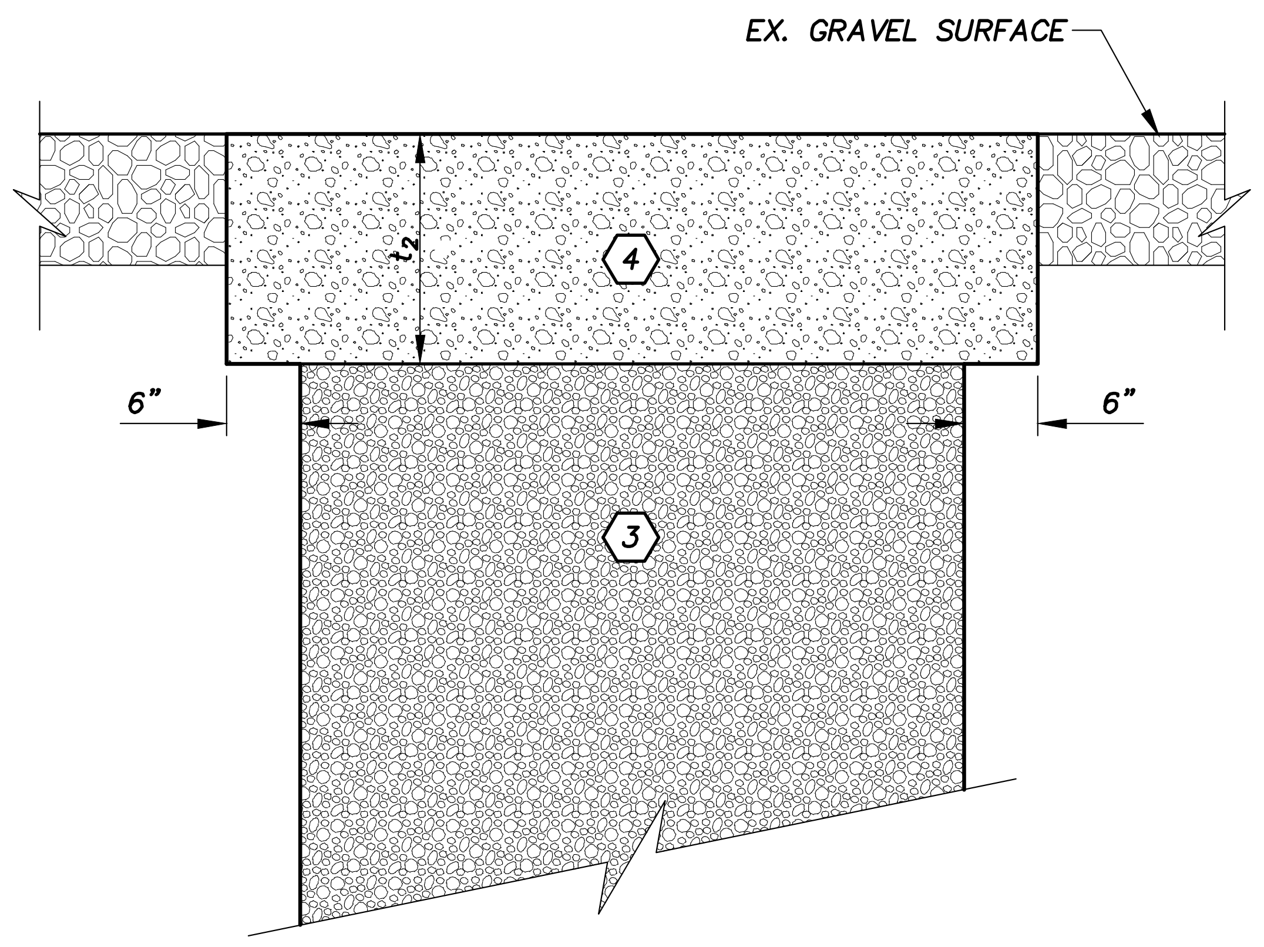
CLASS "B"

SURFACE REPLACEMENT FOR
H.M.A.C. SURFACE WITH FLEXIBLE BASE



CLASS "C"

SURFACE REPLACEMENT FOR
CONCRETE PAVING



CLASS "D"

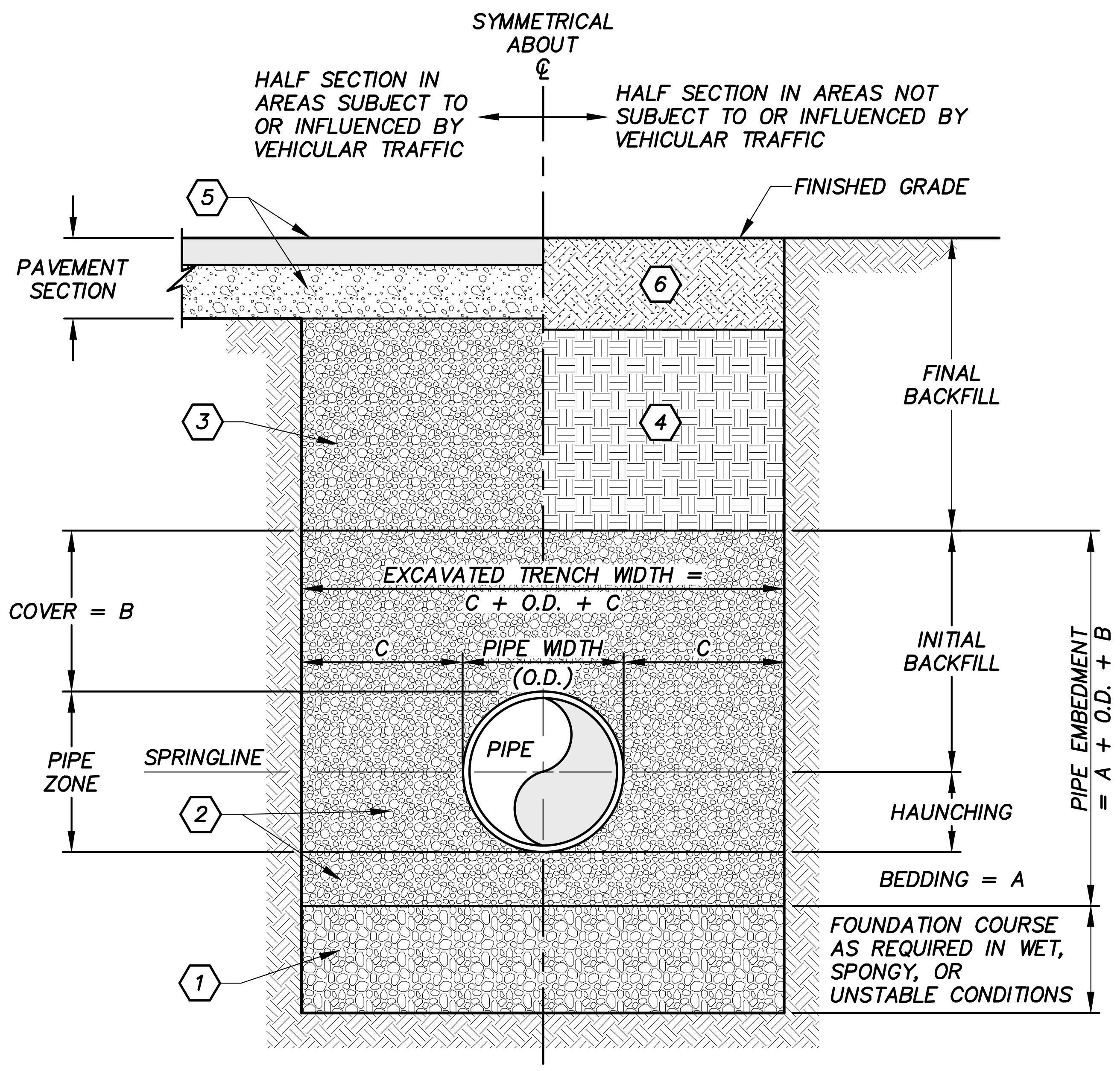
SURFACE REPLACEMENT FOR
GRAVEL SURFACE

MATERIAL REQUIREMENTS

1. HOT MIXED ASPHALTIC CONCRETE (H.M.A.C.) PAVEMENT: PER SPECIFICATION SECTION 32 12 16 – HOT MIX ASPHALTIC CONCRETE PAVING. MINIMUM THICKNESS (t_1) SHALL BE 1 1/2", OR MATCH EXISTING H.M.A.C. SURFACE, WHICHEVER IS GREATER.
2. CLASS "A" CONCRETE BASE MATERIAL: PER SPECIFICATION SECTION 32 30 00 – CAST IN PLACE CONCRETE FOR CIVIL SITE IMPROVEMENTS. THE MINIMUM THICKNESS (t_2) FOR THE BASE SHALL BE 8 INCHES, OR MATCH THE EXISTING BASE THICKNESS, WHICHEVER IS GREATER.
3. BACKFILL MATERIAL IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC: PER SPECIFICATION SECTION 31 23 17 – TRENCHING.
4. FLEXIBLE BASE PER SPECIFICATION SECTION 32 11 23 – FLEXIBLE BASE. MINIMUM THICKNESS (t_2) FOR THE BASE SHALL BE 12", OR MATCH THE EXISTING BASE THICKNESS, WHICHEVER IS GREATER.
5. P.C. CONCRETE PAVEMENT (REINFORCED): CONCRETE SHALL BE CLASS "P". MINIMUM THICKNESS (t_3) FOR THE CONCRETE PAVING SHALL BE 8 INCHES, OR MATCH THE EXISTING CONCRETE PAVING THICKNESS, WHICHEVER IS GREATER.
6. CONSTRUCTION JOINTS TO THE EXISTING P.C. CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH THE DRAWINGS.
7. NO. 5'S x 24" DEFORMED DOWELS AT 12" O.C.
8. 3/4" DRILLED HOLES BLOWN CLEAN. COAT DOWELS WITH EPOXY RESIN, FILL HOLES WITH EPOXY RESIN, & SUPPORT DOWELS IN CENTER OF HOLE UNTIL EPOXY HAS CURED.
9. SAWCUT EX. PVMT. TO SMOOTH, NEAT LINES.

3020 SURFACE REPLACEMENT DETAILS

N.T.S.


SYMMETRICAL ABOUT ℄
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
5
FINISHED GRADE
PAVEMENT SECTION
6
3
4
FINAL BACKFILL
COVER = B
EXCAVATED TRENCH WIDTH = C + O.D. + C
C
PIPE WIDTH (O.D.)
C
INITIAL BACKFILL
PIPE EMBEDMENT = A + O.D. + B
PIPE ZONE
SPRINGLINE
PIPE
2
HAUNCHING
BEDDING = A
FOUNDATION COURSE AS REQUIRED IN WET, SPONGY, OR UNSTABLE CONDITIONS
1

DIMENSION SCHEDULE

PIPE SIZE	A	B	$C_{MIN.}$
20" AND SMALLER	6"	12"	10"
21" THRU 48"	6"	12"	12"
54" THRU 66"	9"	12"	15"
72" AND LARGER	12"	18"	15"

MATERIAL REQUIREMENTS

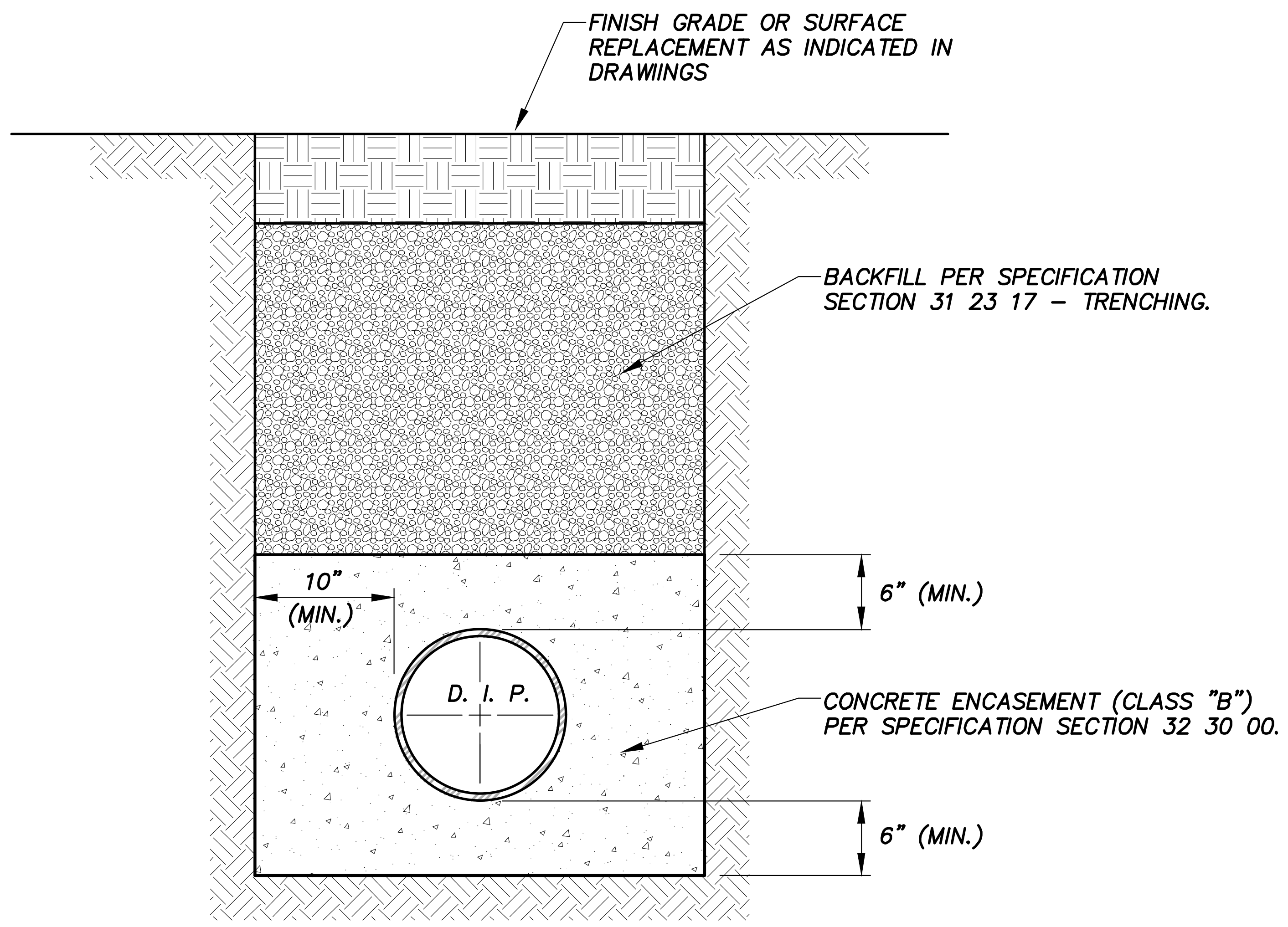
1. FOUNDATION COURSE (AS REQUIRED) TO PROVIDE FIRM, STABLE, AND UNIFORM PIPE SUPPORT. FOUNDATION COURSE MATERIAL SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
2. EMBEDMENT MATERIAL: PER SPECIFICATION SECTION 31 23 17 – TRENCHING.
3. BACKFILL MATERIAL IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC: PER SPECIFICATION SECTION 31 23 17 – TRENCHING.
4. BACKFILL MATERIAL IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC: (NON–TRAFFIC) SHALL BE SELECT SOIL MATERIAL FROM THE EXCAVATED TRENCH, PER SPECIFICATION SECTION 31 23 17 – TRENCHING.
5. NEW PAVEMENT, BASE (AND SUBGRADE) AS PER THE DRAWINGS AND SPECIFICATIONS.

   –OR–

   REFERENCE "SURFACE REPLACEMENT DETAIL" WHEN TRENCHING IN EXISTING PAVEMENT.
6. TOPSOIL, 12 INCHES THICK, EXCAVATED, SALVAGED, AND STOCKPILED FROM ORIGINAL GROUND SURFACE OF THE TRENCH (AND OR UTILITY EASEMENT) AND REPLACED AFTER INSTALLATION OR PIPELINE.

3010 UTILITY TRENCH SECTION

N.T.S.


FINISH GRADE OR SURFACE REPLACEMENT AS INDICATED IN DRAWINGS
BACKFILL PER SPECIFICATION SECTION 31 23 17 – TRENCHING.
10" (MIN.)
6" (MIN.)
D. I. P.
CONCRETE ENCASEMENT (CLASS "B") PER SPECIFICATION SECTION 32 30 00.
6" (MIN.)

3040 CONCRETE ENCASEMENT

N.T.S.

1	3040-CONCRETE ENCASEMENT	6-20-19
1	3020-SURFACE REPLACEMENT DETAILS	6-20-19
REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

UTILITY TRENCH DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
3-000

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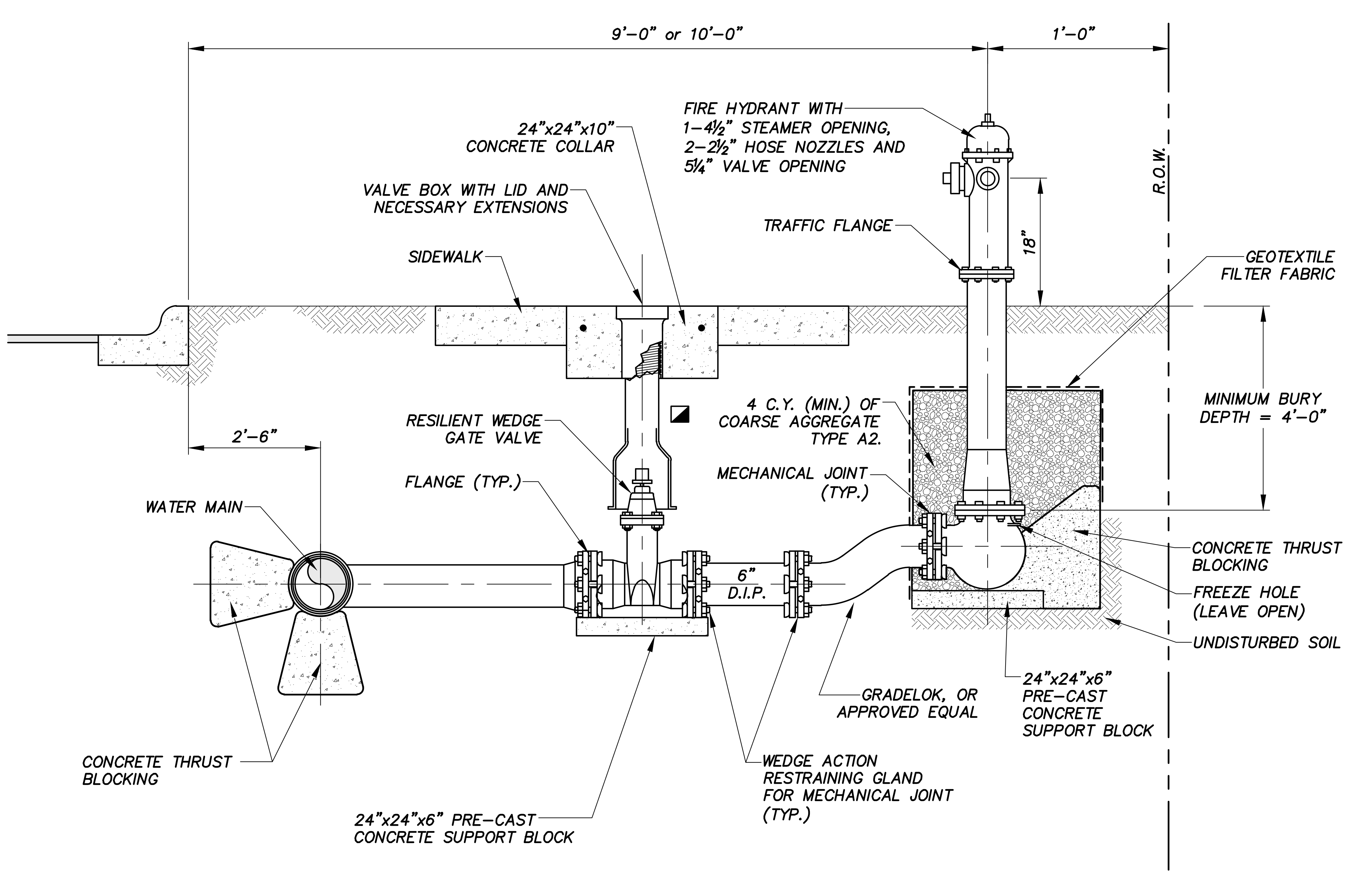
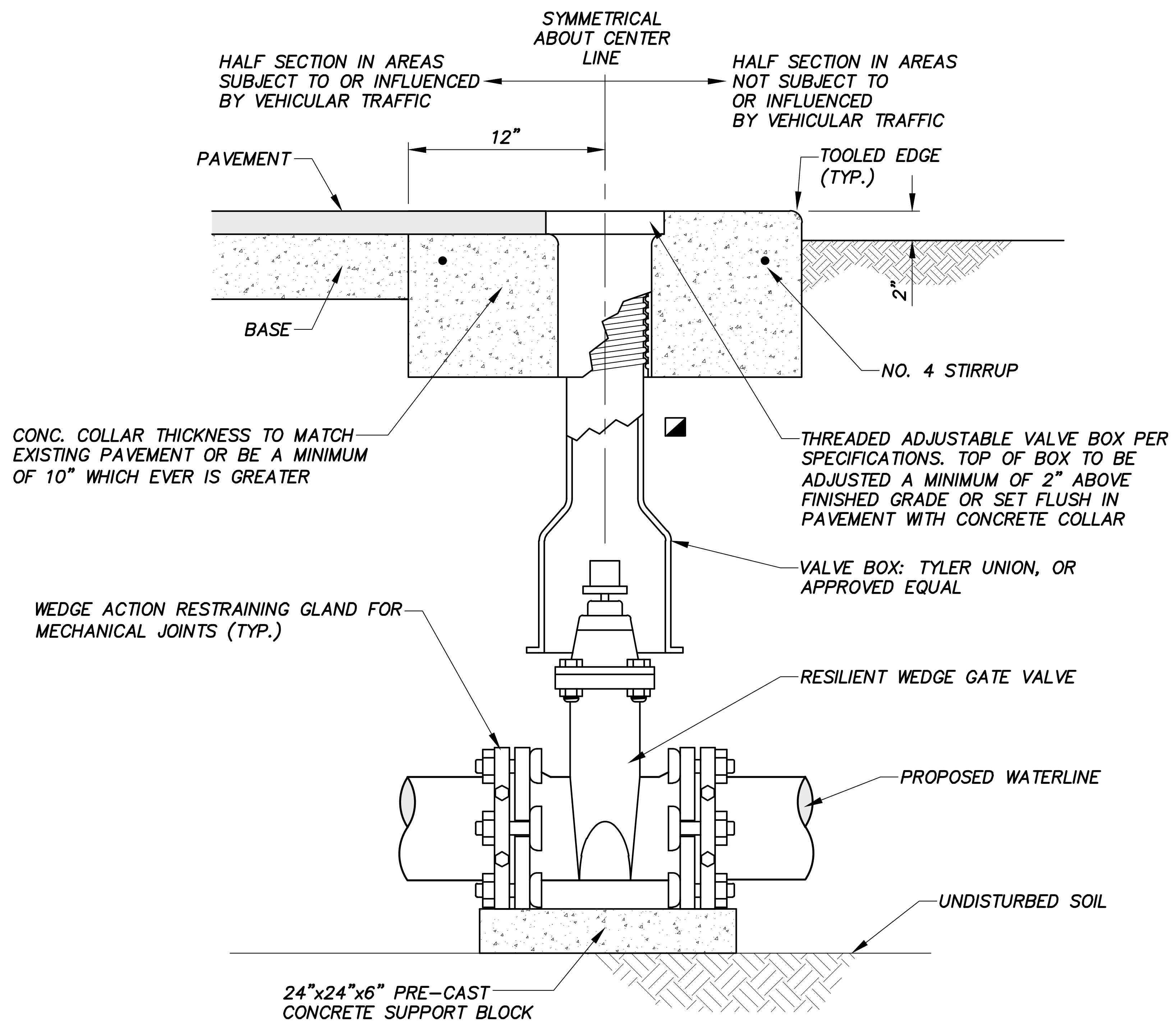

9'–0" or 10'–0"
1'–0"
24"x24"x10" CONCRETE COLLAR
FIRE HYDRANT WITH 1–4½" STEAMER OPENING, 2–2½" HOSE NOZZLES AND 5¼" VALVE OPENING
VALVE BOX WITH LID AND NECESSARY EXTENSIONS
TRAFFIC FLANGE
18"
R.O.W.
SIDEWALK
GEOTEXTILE FILTER FABRIC
MINIMUM BURY DEPTH = 4'–0"
2'–6"
RESILIENT WEDGE GATE VALVE
4 C.Y. (MIN.) OF COARSE AGGREGATE TYPE A2.
FLANGE (TYP.)
MECHANICAL JOINT (TYP.)
WATER MAIN
6" D.I.P.
CONCRETE THRUST BLOCKING
FREEZE HOLE (LEAVE OPEN)
UNDISTURBED SOIL
GRADELOK, OR APPROVED EQUAL
24"x24"x6" PRE–CAST CONCRETE SUPPORT BLOCK
CONCRETE THRUST BLOCKING
WEDGE ACTION RESTRAINING GLAND FOR MECHANICAL JOINT (TYP.)
24"x24"x6" PRE–CAST CONCRETE SUPPORT BLOCK

◪ IF BURY DEPTH EXCEEDS VALVE BOX HEIGHT, USE D.I. PIPE EXTENSION.

4010 FIRE HYDRANT ASSEMBLY

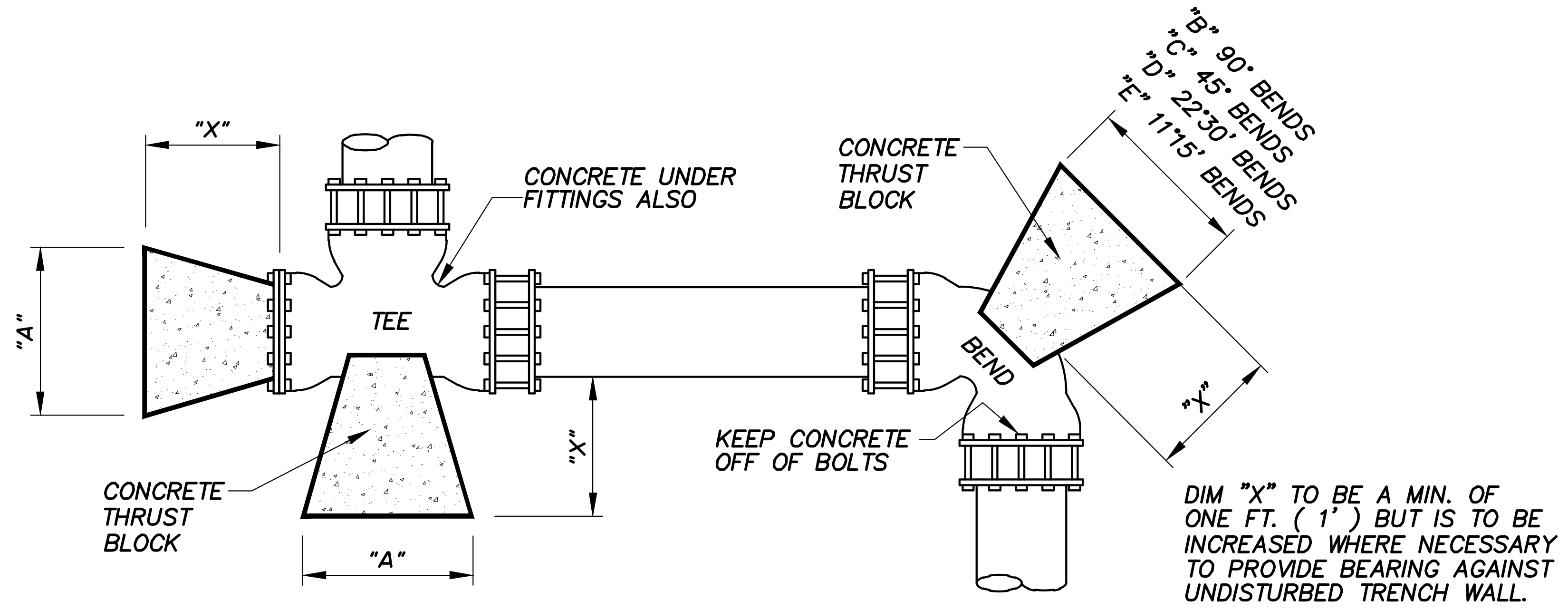
N.T.S.


SYMMETRICAL ABOUT CENTER LINE
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
12"
PAVEMENT
TOOLED EDGE (TYP.)
2"
BASE
NO. 4 STIRRUP
CONC. COLLAR THICKNESS TO MATCH EXISTING PAVEMENT OR BE A MINIMUM OF 10" WHICH EVER IS GREATER
THREADED ADJUSTABLE VALVE BOX PER SPECIFICATIONS. TOP OF BOX TO BE ADJUSTED A MINIMUM OF 2" ABOVE FINISHED GRADE OR SET FLUSH IN PAVEMENT WITH CONCRETE COLLAR
VALVE BOX: TYLER UNION, OR APPROVED EQUAL
WEDGE ACTION RESTRAINING GLAND FOR MECHANICAL JOINTS (TYP.)
RESILIENT WEDGE GATE VALVE
PROPOSED WATERLINE
UNDISTURBED SOIL
24"x24"x6" PRE–CAST CONCRETE SUPPORT BLOCK

◪ IF BURY DEPTH EXCEEDS VALVE BOX HEIGHT, USE D.I. PIPE EXTENSION.

4030 RESILIENT WEDGE GATE VALVE AND BOX

N.T.S.



DIM "X" TO BE A MIN. OF ONE FT. (1') BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.

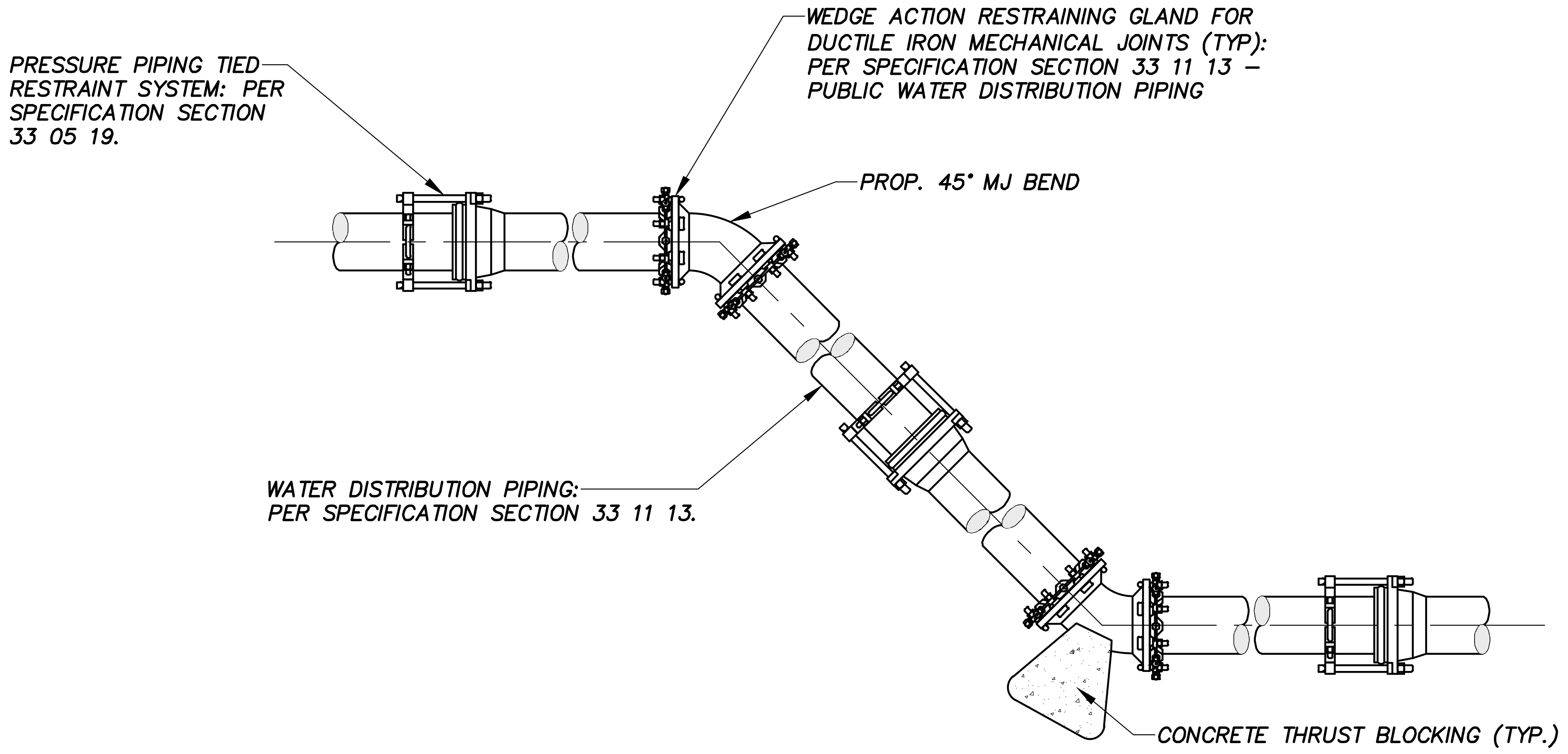
HORIZONTAL BLOCKING TABLE

PIPE SIZE	"X" DIM.	PLUGS & TEES "A"	MIN. AREA	MIN. VOL.	90° BENDS "B"	MIN. AREA	MIN. VOL.	45° BENDS "C"	MIN. AREA	MIN. VOL.	22°30' BENDS "D"	MIN. AREA	MIN. VOL.	11°15' BENDS "E"	MIN. AREA	MIN. VOL.
4"	1'–0"	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05
6"	1'–6"	1'–0"	1.06	0.06	1'–2"	1.05	0.09	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05
8"	1'–6"	1'–3"	1.89	0.11	1'–6"	2.66	0.15	1'–3"	1.44	0.08	1'–0"	0.83	0.05	1'–0"	0.83	0.05
10"	1'–6"	1'–9"	2.95	0.17	2'–0"	4.17	0.24	1'–6"	2.26	0.13	1'–3"	1.15	0.07	1'–0"	0.83	0.05
12"	1'–6"	2'–0"	4.25	0.24	2'–3"	6.00	0.34	1'–9"	3.25	0.18	1'–3"	1.65	0.10	1'–0"	0.83	0.05
16"	2'–0"	2'–7"	7.54	0.56	3'–0"	10.65	0.79	2'–3"	5.76	0.43	1'–8"	2.94	0.22	1'–2"	1.48	0.11
18"	2'–0"	2'–11"	7.70	0.57	3'–5"	10.89	0.82	2'–6"	5.89	0.44	1'–10"	3.01	0.22	1'–5"	1.51	0.11
20"	2'–0"	3'–3"	7.86	0.59	3'–9"	11.12	0.84	2'–9"	6.01	0.45	2'–0"	3.07	0.23	1'–7"	1.54	0.12
24"	2'–0"	3'–8"	11.33	0.84	4'–3"	16.00	1.20	3'–2"	8.65	0.65	2'–6"	4.42	0.33	1'–10"	2.22	0.17

NOTE: CALCULATIONS IN MIN. AREA COLUMN ARE IN SQUARE FEET.
CALCULATIONS IN THE MIN. VOLUME COLUMN ARE IN CUBIC YARDS.

4020 CONCRETE THRUST BLOCKING DETAIL FOR MJ PIPE FITTINGS

N.T.S.


PRESSURE PIPING TIED RESTRAINT SYSTEM: PER SPECIFICATION SECTION 33 05 19.
WEDGE ACTION RESTRAINING GLAND FOR DUCTILE IRON MECHANICAL JOINTS (TYP): PER SPECIFICATION SECTION 33 11 13 – PUBLIC WATER DISTRIBUTION PIPING
PROP. 45° MJ BEND
WATER DISTRIBUTION PIPING: PER SPECIFICATION SECTION 33 11 13.
CONCRETE THRUST BLOCKING (TYP.)

NOTES:

1. PIPES CONNECTED TO THE UPPER BEND RESTRAINTS SHALL BE EBAA IRON SERIES 1500 (OR EQUAL) FOR 4"–12" C–900 PIPE AND SERIES 2800 (OR EQUAL) FOR 14" OR LARGER C–900 PIPE FOR LENGTHS INDICATED IN THE DRAWINGS (RULING), OR ON THE TABLE BELOW (DEFAULT).
2. PIPES CONNECTED TO THE LOWER BEND SHALL BE EBAA IRON SERIES 1500 (OR EQUAL) FOR 4"–12" C–900 PIPE AND SERIES 2800 (OR EQUAL) FOR 14" OR LARGER C–900 PIPE FOR LENGTHS INDICATED IN THE DRAWINGS (RULING) OR ON THE TABLE BELOW (DEFAULT).

PIPE SIZE	6"	8"	10"	12"	14"	16"	18"	20"	> 20"
UPPER RESTRAINED LENGTH FT.	23'	30'	36'	43'	49'	55'	61'	67'	◪
LOWER RESTRAINED LENGTH FT.	6'	8'	10'	12'	13'	15'	16'	18'	◪

◪ REFERENCE DRAWINGS

4040 VERTICAL BEND / RESTRAINED JOINT

N.T.S.

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

WATERLINE DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
4-000

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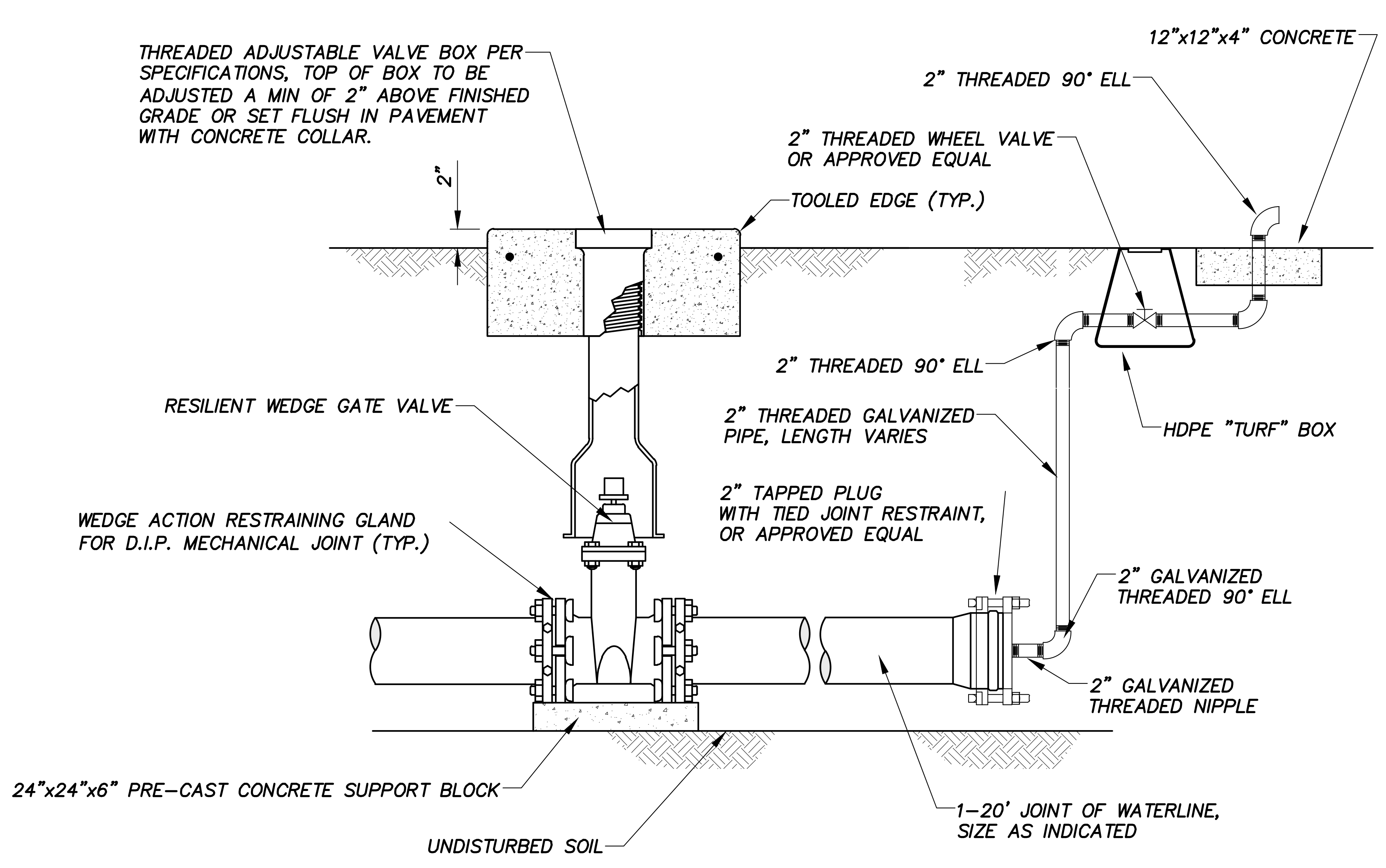
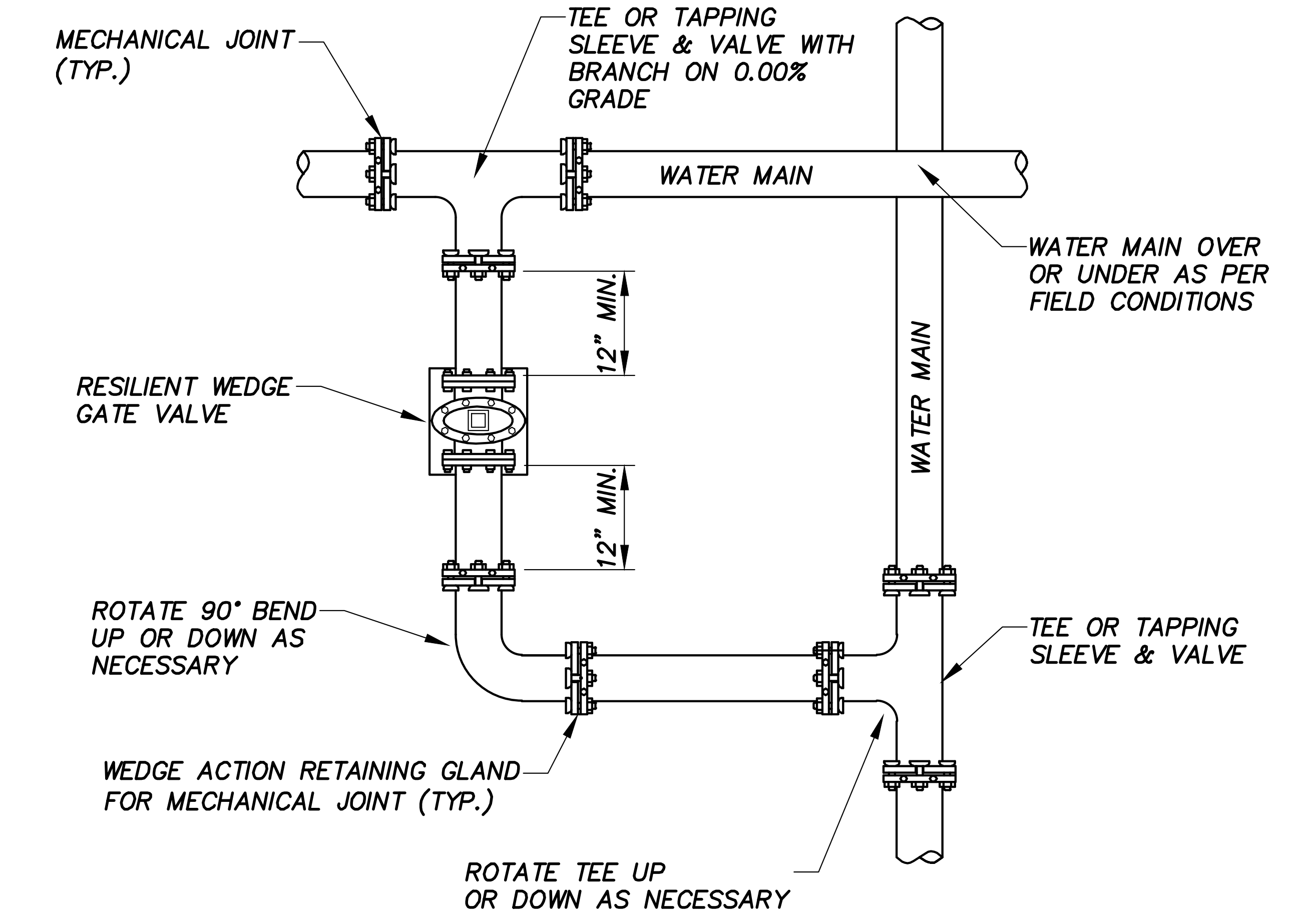

THREADED ADJUSTABLE VALVE BOX PER SPECIFICATIONS, TOP OF BOX TO BE ADJUSTED A MIN OF 2" ABOVE FINISHED GRADE OR SET FLUSH IN PAVEMENT WITH CONCRETE COLLAR.
2"
12"x12"x4" CONCRETE
2" THREADED 90° ELL
2" THREADED WHEEL VALVE OR APPROVED EQUAL
TOOLED EDGE (TYP.)
2" THREADED 90° ELL
2" THREADED GALVANIZED PIPE, LENGTH VARIES
HDPE "TURF" BOX
RESILIENT WEDGE GATE VALVE
2" TAPPED PLUG WITH TIED JOINT RESTRAINT, OR APPROVED EQUAL
WEDGE ACTION RESTRAINING GLAND FOR D.I.P. MECHANICAL JOINT (TYP.)
2" GALVANIZED THREADED 90° ELL
2" GALVANIZED THREADED NIPPLE
24"x24"x6" PRE-CAST CONCRETE SUPPORT BLOCK
UNDISTURBED SOIL
1-20' JOINT OF WATERLINE, SIZE AS INDICATED

NOTES:

1. UPON ACCEPTANCE OF WATER LINES CONTRACTOR TO REMOVE UPPER SECTION OF 2" BLOW OFF AND COUPLING AND PLACE 2" THREADED CAP PLUG.

4050 END OF LINE TEMPORARY BLOW OFF

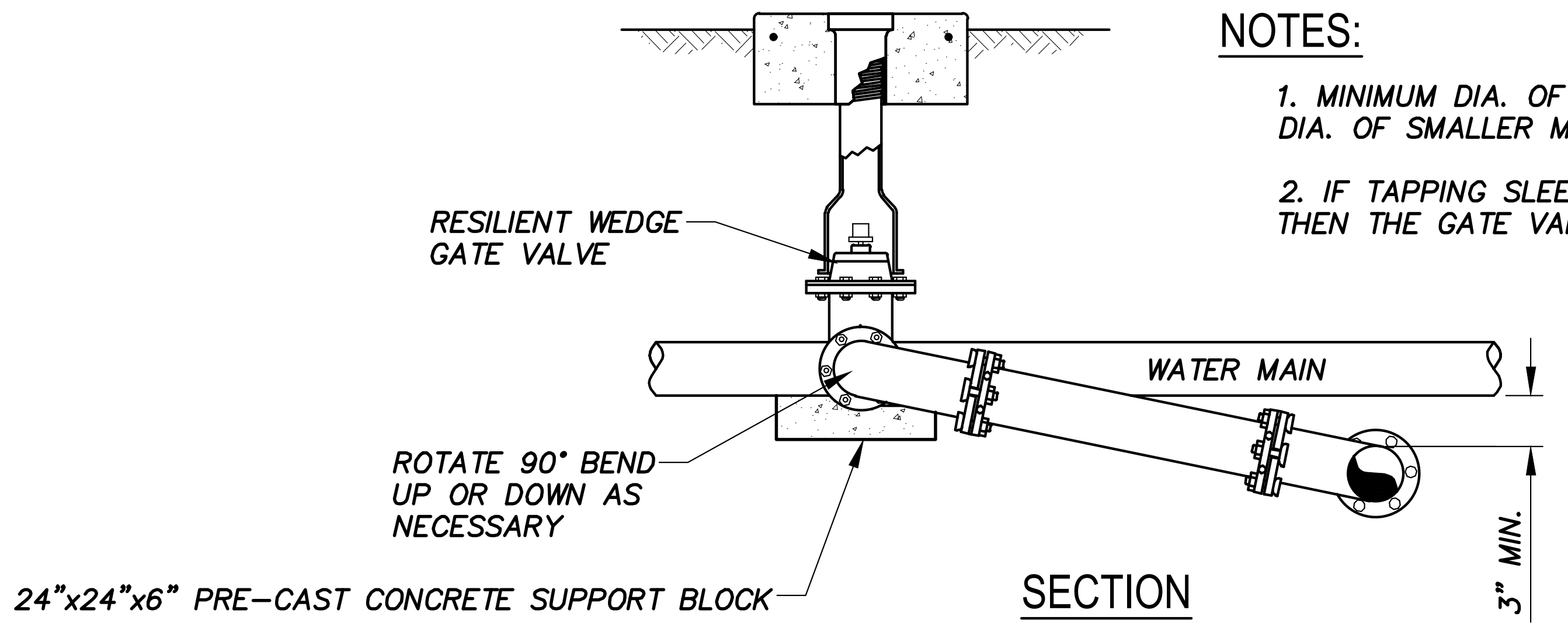
N.T.S.


MECHANICAL JOINT (TYP.)
TEE OR TAPPING SLEEVE & VALVE WITH BRANCH ON 0.00% GRADE
WATER MAIN
WATER MAIN OVER OR UNDER AS PER FIELD CONDITIONS
RESILIENT WEDGE GATE VALVE
12" MIN.
12" MIN.
WATER MAIN
ROTATE 90° BEND UP OR DOWN AS NECESSARY
TEE OR TAPPING SLEEVE & VALVE
WEDGE ACTION RETAINING GLAND FOR MECHANICAL JOINT (TYP.)
ROTATE TEE UP OR DOWN AS NECESSARY

PLAN

NOTES:

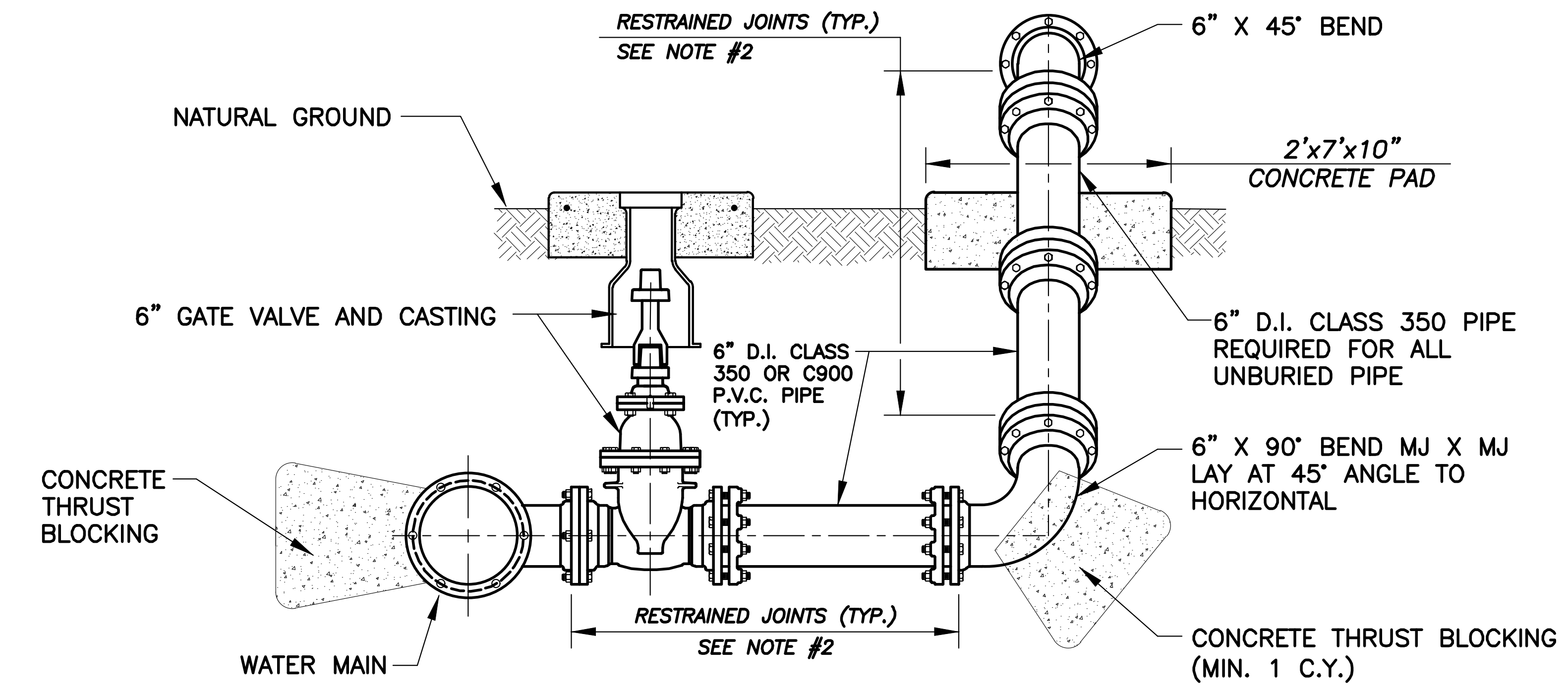
1. MINIMUM DIA. OF RING CONNECTION SHALL BE DIA. OF SMALLER MAIN.
2. IF TAPPING SLEEVE AND VALVE IS USED, THEN THE GATE VALVE IS NOT NECESSARY.


RESILIENT WEDGE GATE VALVE
WATER MAIN
ROTATE 90° BEND UP OR DOWN AS NECESSARY
24"x24"x6" PRE-CAST CONCRETE SUPPORT BLOCK
3" MIN.

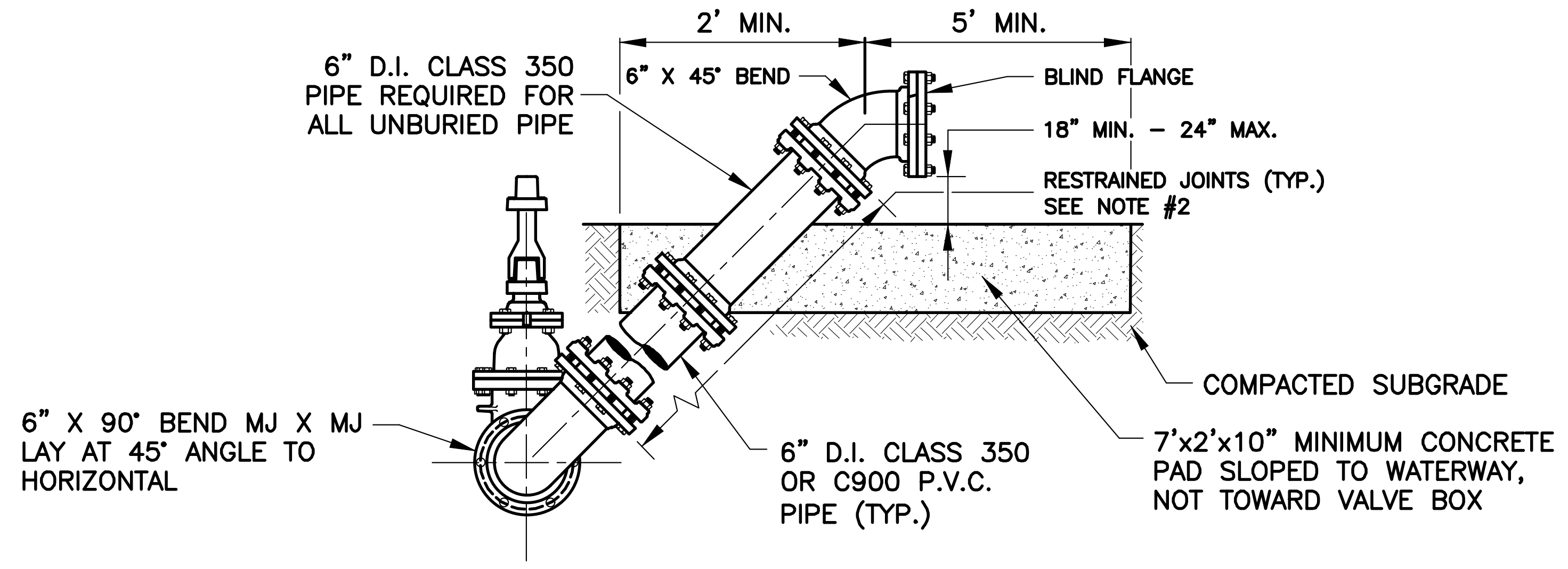
SECTION

4070 RING CONNECTION

N.T.S.


RESTRAINED JOINTS (TYP.)
SEE NOTE #2
6" X 45° BEND
NATURAL GROUND
2'x7'x10"
CONCRETE PAD
6" GATE VALVE AND CASTING
6" D.I. CLASS 350 OR C900 P.V.C. PIPE (TYP.)
6" D.I. CLASS 350 PIPE REQUIRED FOR ALL UNBURIED PIPE
CONCRETE THRUST BLOCKING
6" X 90° BEND MJ X MJ LAY AT 45° ANGLE TO HORIZONTAL
RESTRAINED JOINTS (TYP.)
SEE NOTE #2
CONCRETE THRUST BLOCKING (MIN. 1 C.Y.)
WATER MAIN

SIDE VIEW


2' MIN.
5' MIN.
6" D.I. CLASS 350 PIPE REQUIRED FOR ALL UNBURIED PIPE
6" X 45° BEND
BLIND FLANGE
18" MIN. – 24" MAX.
RESTRAINED JOINTS (TYP.)
SEE NOTE #2
COMPACTED SUBGRADE
6" X 90° BEND MJ X MJ LAY AT 45° ANGLE TO HORIZONTAL
6" D.I. CLASS 350 OR C900 P.V.C. PIPE (TYP.)
7'x2'x10" MINIMUM CONCRETE PAD SLOPED TO WATERWAY, NOT TOWARD VALVE BOX

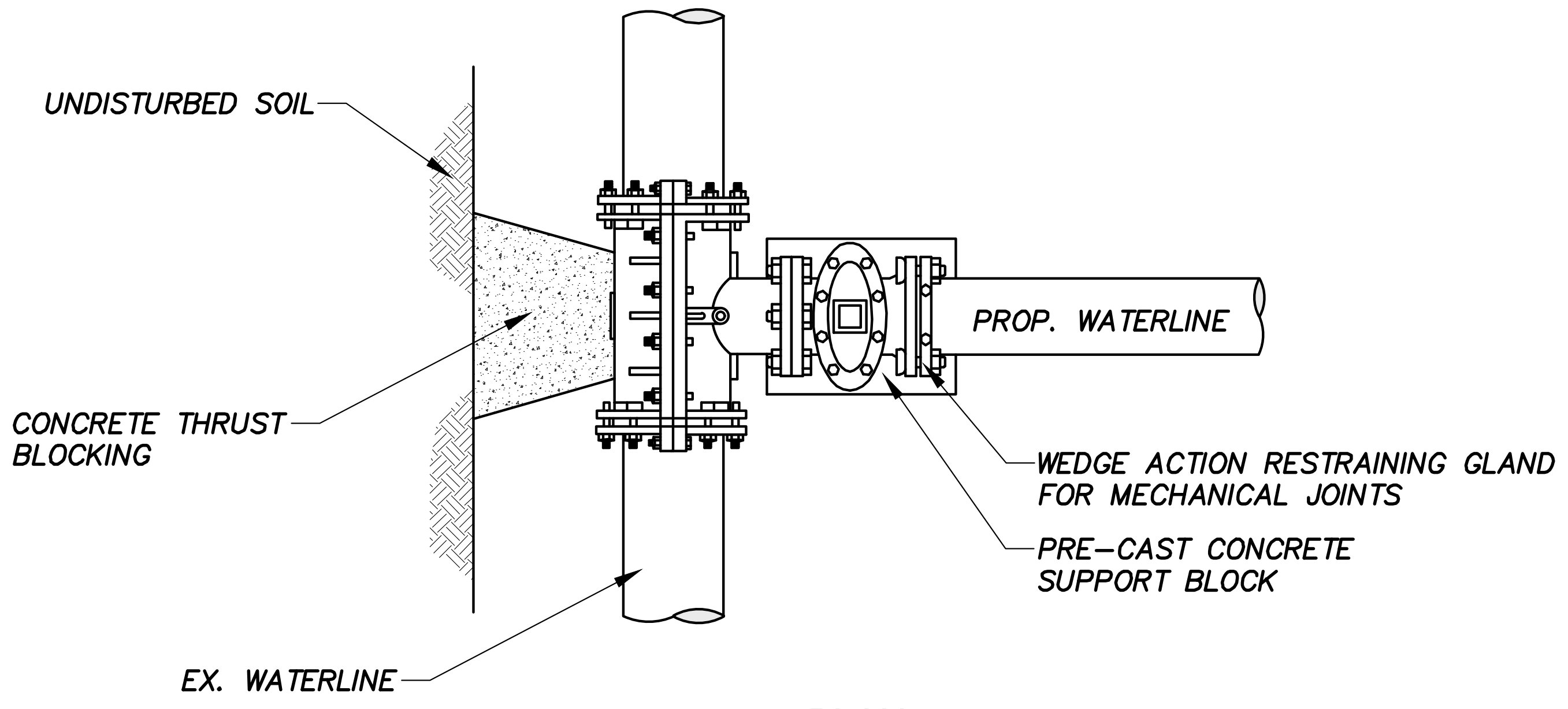
BACK VIEW

NOTES:

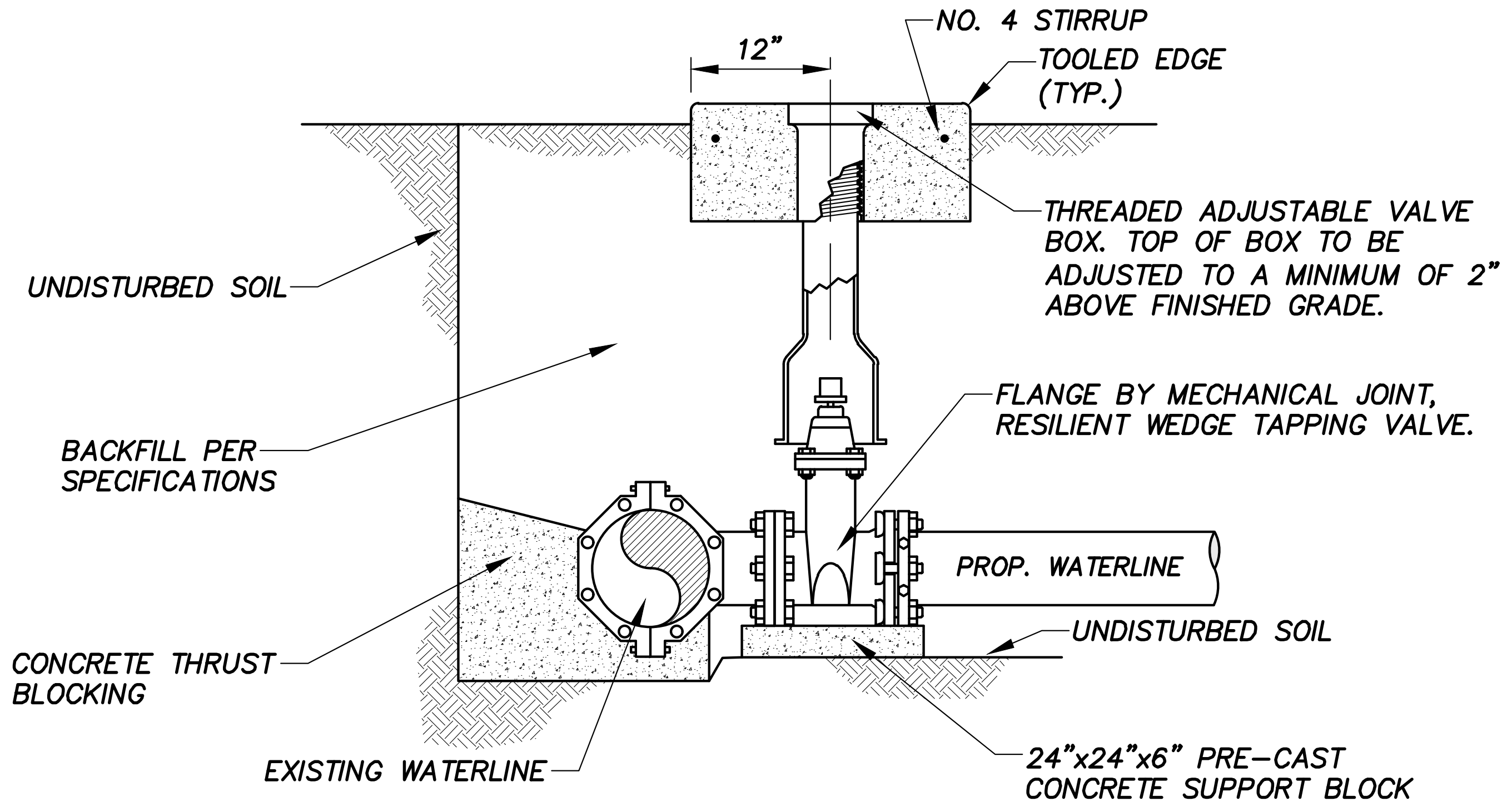
1. WRAP 8 MIL. POLY-FILM WRAP ON ALL BURIED DUCTILE IRON PIPE AND FITTINGS.
2. PROVIDE RESTRAINED JOINTS AND THRUST BLOCKING. FLG X FLG JOINTS ARE ACCEPTABLE FROM 90° BEND TO BLIND FLANGE.
3. EXTERIOR SURFACES OF EXPOSED PIPE SHALL BE PAINTED SAFETY BLUE.

4060 BLOW OFF VALVE ASSEMBLY

N.T.S.


UNDISTURBED SOIL
PROP. WATERLINE
CONCRETE THRUST BLOCKING
WEDGE ACTION RESTRAINING GLAND FOR MECHANICAL JOINTS
PRE-CAST CONCRETE SUPPORT BLOCK
EX. WATERLINE

PLAN


NO. 4 STIRRUP
12"
TOOLED EDGE (TYP.)
THREADED ADJUSTABLE VALVE BOX. TOP OF BOX TO BE ADJUSTED TO A MINIMUM OF 2" ABOVE FINISHED GRADE.
UNDISTURBED SOIL
FLANGE BY MECHANICAL JOINT, RESILIENT WEDGE TAPPING VALVE.
BACKFILL PER SPECIFICATIONS
PROP. WATERLINE
UNDISTURBED SOIL
CONCRETE THRUST BLOCKING
24"x24"x6" PRE-CAST CONCRETE SUPPORT BLOCK
EXISTING WATERLINE

SECTION

4080 TAPPING SLEEVE & VALVE

N.T.S.

REV.	DESCRIPTION	DATE

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

WATERLINE DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
4-001

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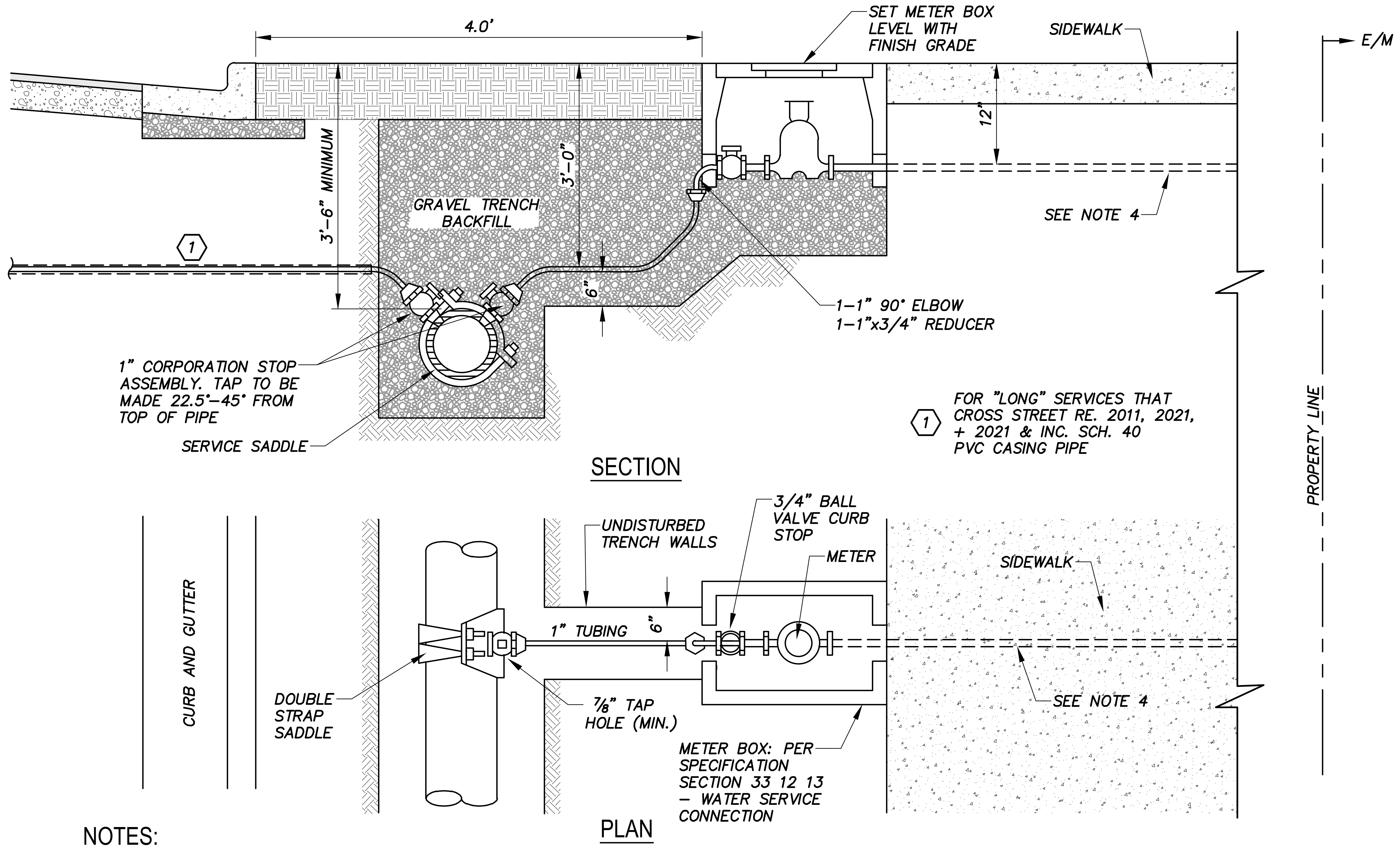
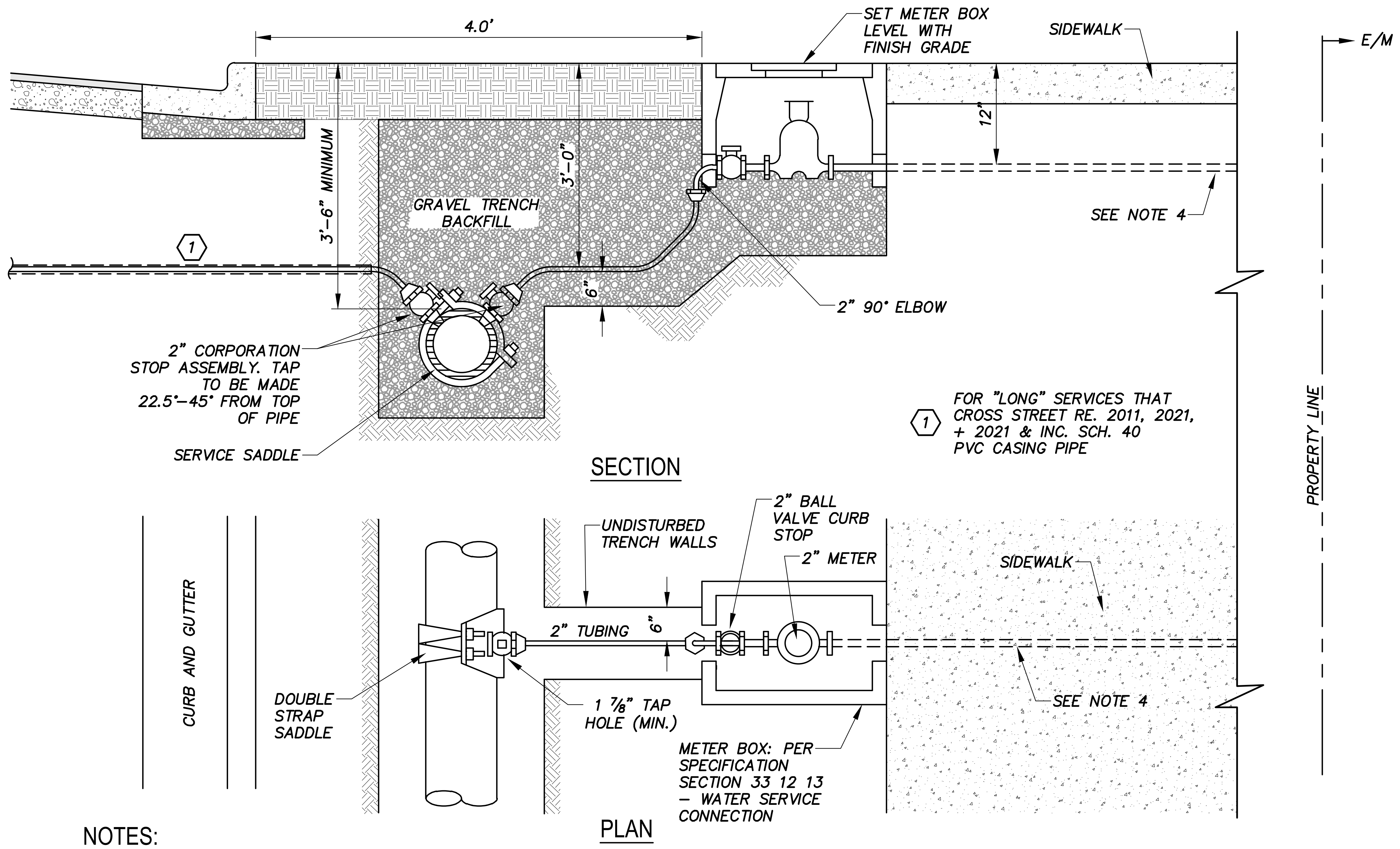

4.0'
SET METER BOX LEVEL WITH FINISH GRADE
SIDEWALK
E/M
3'-6" MINIMUM
3'-0"
12"
GRAVEL TRENCH BACKFILL
SEE NOTE 4
1
6"
1-1" 90° ELBOW
1-1"x3/4" REDUCER
1" CORPORATION STOP ASSEMBLY. TAP TO BE MADE 22.5°-45° FROM TOP OF PIPE
SERVICE SADDLE
1 FOR "LONG" SERVICES THAT CROSS STREET RE. 2011, 2021, + 2021 & INC. SCH. 40 PVC CASING PIPE
PROPERTY LINE
SECTION
3/4" BALL VALVE CURB STOP
UNDISTURBED TRENCH WALLS
METER
SIDEWALK
CURB AND GUTTER
1" TUBING
6"
DOUBLE STRAP SADDLE
⅞" TAP HOLE (MIN.)
SEE NOTE 4
METER BOX: PER SPECIFICATION SECTION 33 12 13 – WATER SERVICE CONNECTION
PLAN

NOTES:

1. WATER SERVICE CONNECTIONS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 33 12 13 – WATER SERVICE CONNECTIONS.
2. USE CONCRETE METER BOX WITH CAST IRON TRAFFIC COVER AND CAST IRON READER LID.
3. A "W" SHALL BE STAMPED ON THE FACE OF THE CURB AT THE LOCATION OF EACH WATER SERVICE.
4. YARD LINE BY OTHERS; OR CONNECT TO EXISTING YARD LINE.

4092 1" SERVICE & METER BOX INSTALLATION

N.T.S.

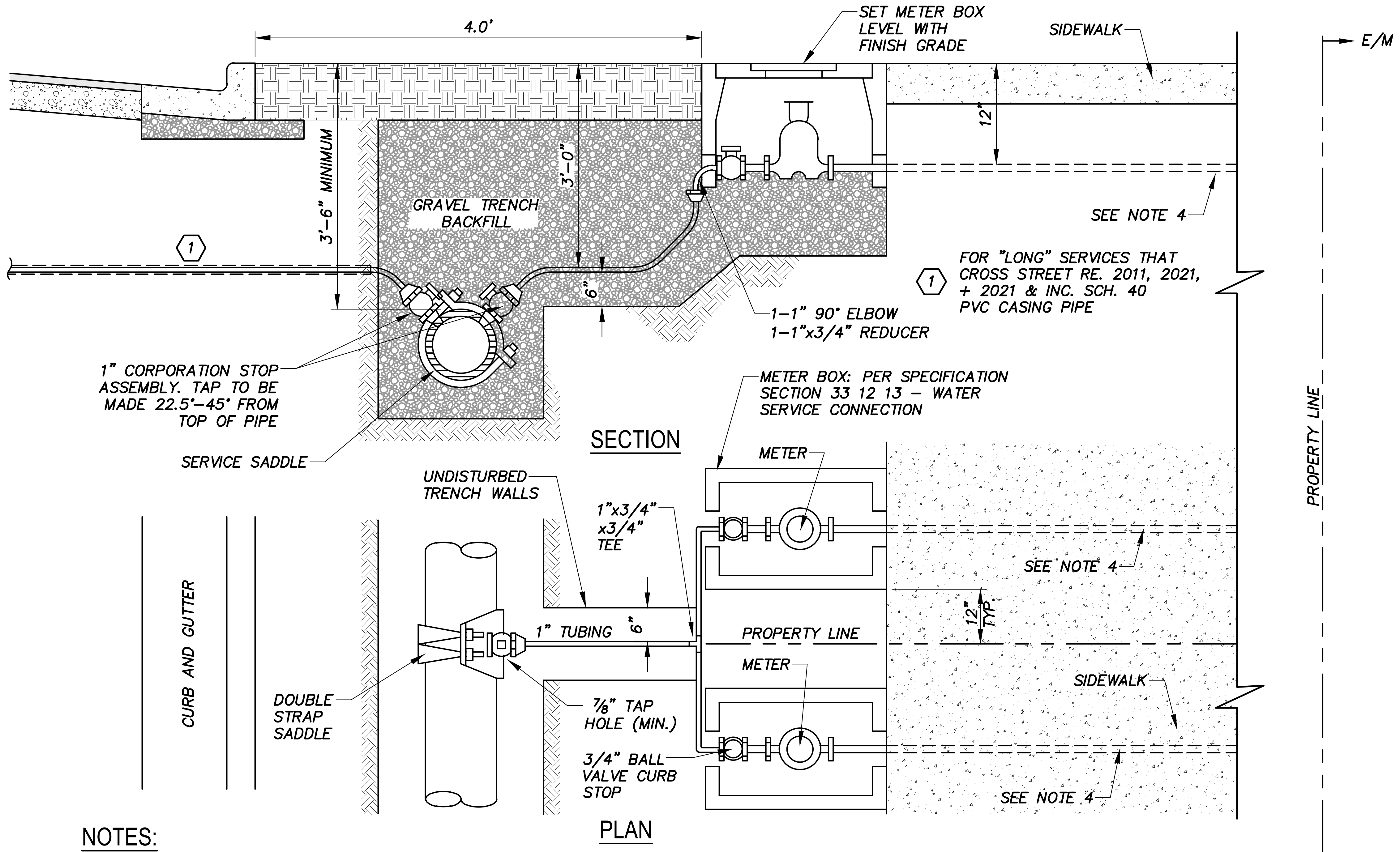

4.0'
SET METER BOX LEVEL WITH FINISH GRADE
SIDEWALK
E/M
3'-6" MINIMUM
3'-0"
12"
GRAVEL TRENCH BACKFILL
SEE NOTE 4
1
6"
2" 90° ELBOW
2" CORPORATION STOP ASSEMBLY. TAP TO BE MADE 22.5°-45° FROM TOP OF PIPE
SERVICE SADDLE
1 FOR "LONG" SERVICES THAT CROSS STREET RE. 2011, 2021, + 2021 & INC. SCH. 40 PVC CASING PIPE
PROPERTY LINE
SECTION
2" BALL VALVE CURB STOP
UNDISTURBED TRENCH WALLS
2" METER
SIDEWALK
CURB AND GUTTER
2" TUBING
6"
DOUBLE STRAP SADDLE
1 ⅞" TAP HOLE (MIN.)
SEE NOTE 4
METER BOX: PER SPECIFICATION SECTION 33 12 13 – WATER SERVICE CONNECTION
PLAN

NOTES:

1. WATER SERVICE CONNECTIONS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 33 12 13 – WATER SERVICE CONNECTIONS.
2. USE CONCRETE METER BOX WITH CAST IRON TRAFFIC COVER AND CAST IRON READER LID.
3. A "W" SHALL BE STAMPED ON THE FACE OF THE CURB AT THE LOCATION OF EACH WATER SERVICE.
4. YARD LINE BY OTHERS; OR CONNECT TO EXISTING YARD LINE.

4112 2" WATER SERVICE & METER BOX INSTALLATION

N.T.S.

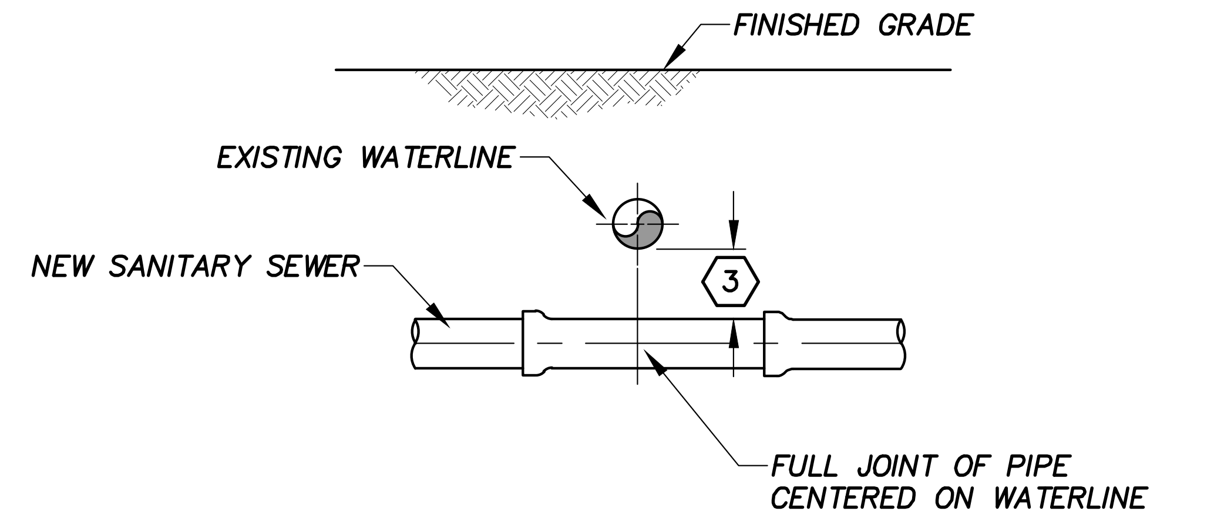


NOTES:

1. WATER SERVICE CONNECTIONS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 33 12 13 – WATER SERVICE CONNECTIONS.
2. USE CONCRETE METER BOX WITH CAST IRON TRAFFIC COVER AND CAST IRON READER LID.
3. A "W" SHALL BE STAMPED ON THE FACE OF THE CURB AT THE LOCATION OF EACH WATER SERVICE.
4. YARD LINE BY OTHERS; OR CONNECT TO EXISTING YARD LINE.

4101 BULLHEAD (2-1") WATER SERVICE & METER BOX INSTALLATION

N.T.S.



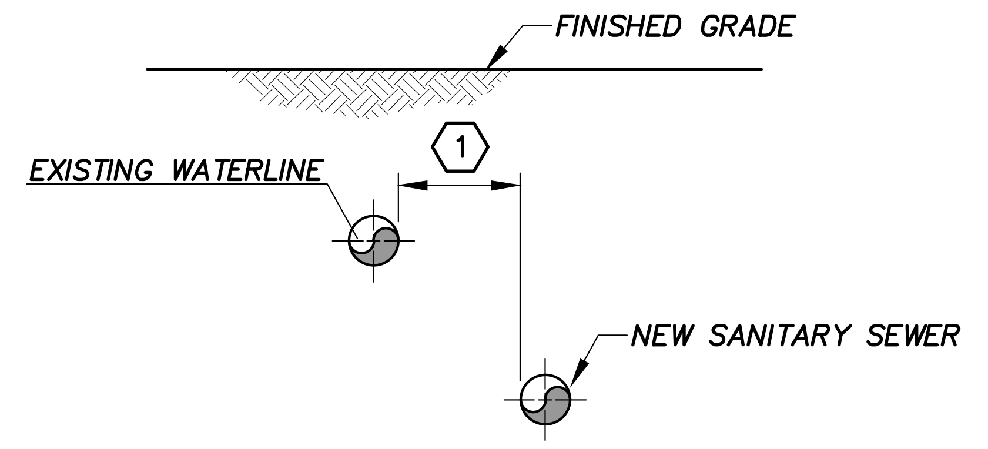
NEW SANITARY SEWER CROSSING EXISTING WATERLINE

KEY NOTES:

① ALL WATER AND SEWER LINE CONSTRUCTION RUNNING PARALLEL WITH EACH OTHER SHALL MAINTAIN A 9' HORIZONTAL SEPARATION, PIPE WALL TO PIPE WALL.

② SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS – REFER TO INTERNATIONAL PLUMBING CODE FOR APPLICABLE REQUIREMENTS.

③ ALL SEWER AND WATERLINE CROSSINGS SHALL COMPLY WITH THE TCEQ CHAPTER 290, PUBLIC DRINKING WATER SECTION 290.44 WATER DISTRIBUTION, SUB SECTION B, NEW WATERLINE INSTALLATION–CROSSING LINES, PARAGRAPHS (1) THROUGH (I) AND ALL SUB PARAGRAPHS THEREIN.



NEW SANITARY SEWER PARALLEL TO EXISTING WATERLINE

4120 WATER & SANITARY SEWER CROSSING

N.T.S.

REV.	DESCRIPTION	DATE
1	4101 - 1"x3/4" TEE	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

WATERLINE DETAILS

6-1-2020
DATE

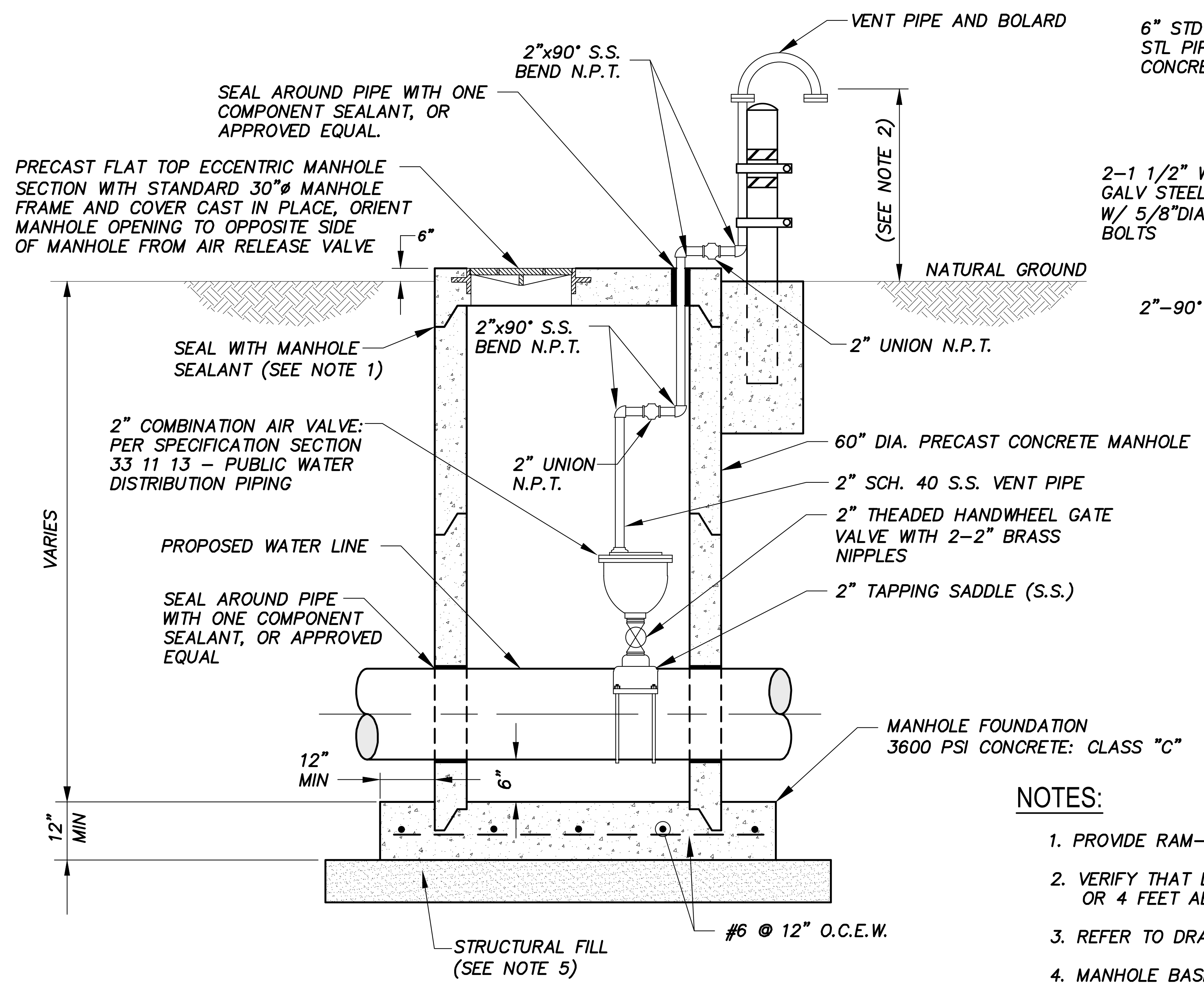
George E. Walker, Jr.
GEORGE E. WALKER, JR.

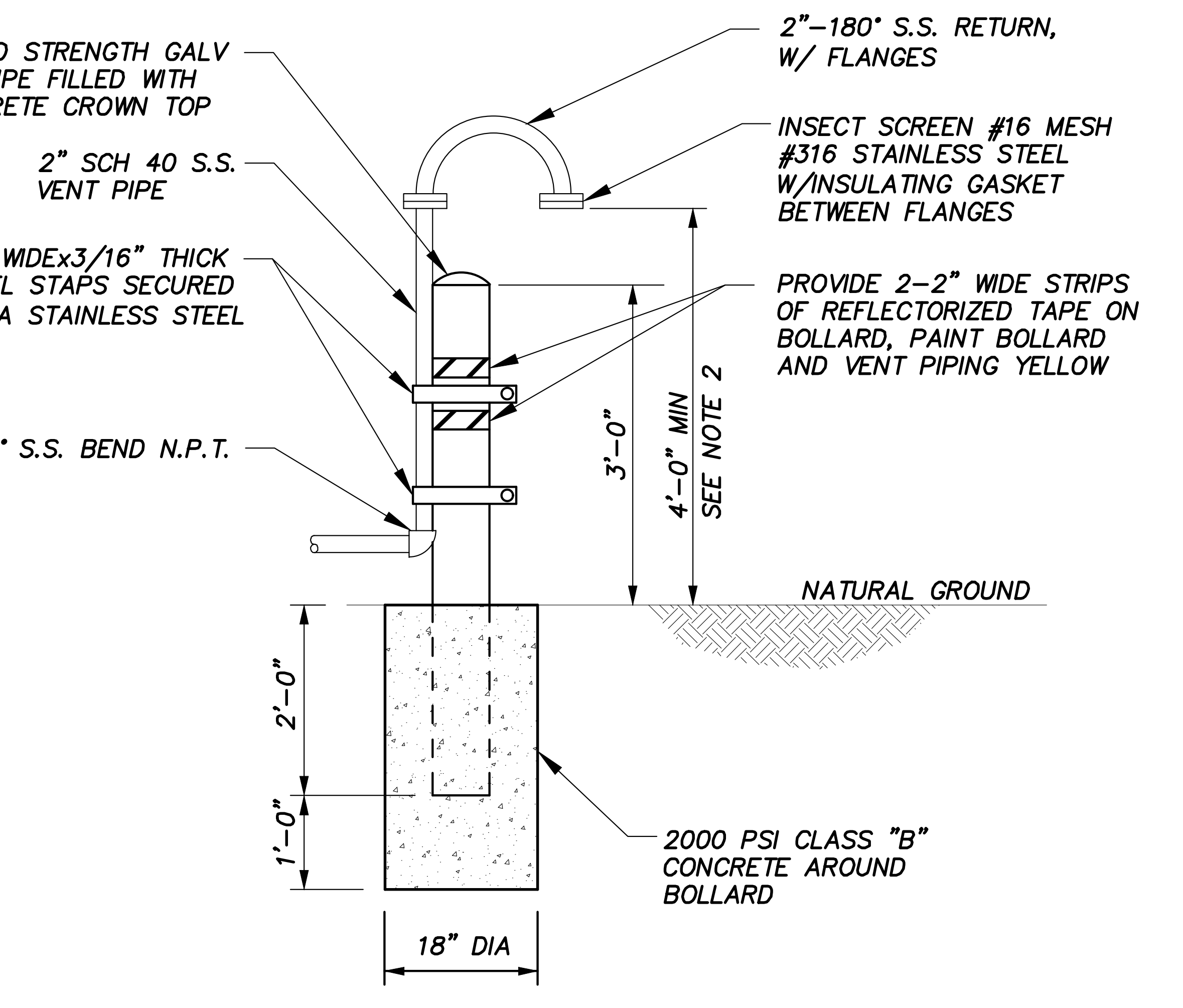
STATE OF TEXAS
GEORGE E. WALKER, JR.
#65360
REGISTERED PROFESSIONAL ENGINEER

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
4-002

G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD WATER DETAILS.DWG, 4-002 WATERLINE DETAILS, 6/2/2020 10:21:11 AM, achilds


VENT PIPE AND BOLARD
2"x90° S.S. BEND N.P.T.
SEAL AROUND PIPE WITH ONE COMPONENT SEALANT, OR APPROVED EQUAL.
PRECAST FLAT TOP ECCENTRIC MANHOLE SECTION WITH STANDARD 30"ø MANHOLE FRAME AND COVER CAST IN PLACE, ORIENT MANHOLE OPENING TO OPPOSITE SIDE OF MANHOLE FROM AIR RELEASE VALVE
6"
(SEE NOTE 2)
NATURAL GROUND
SEAL WITH MANHOLE SEALANT (SEE NOTE 1)
2"x90° S.S. BEND N.P.T.
2" UNION N.P.T.
2" COMBINATION AIR VALVE: PER SPECIFICATION SECTION 33 11 13 – PUBLIC WATER DISTRIBUTION PIPING
2" UNION N.P.T.
60" DIA. PRECAST CONCRETE MANHOLE
2" SCH. 40 S.S. VENT PIPE
VARIES
PROPOSED WATER LINE
2" THEADED HANDWHEEL GATE VALVE WITH 2–2" BRASS NIPPLES
2" TAPPING SADDLE (S.S.)
SEAL AROUND PIPE WITH ONE COMPONENT SEALANT, OR APPROVED EQUAL
MANHOLE FOUNDATION 3600 PSI CONCRETE: CLASS "C"
12" MIN
6"
12" MIN
#6 @ 12" O.C.E.W.
STRUCTURAL FILL (SEE NOTE 5)


6" STD STRENGTH GALV STL PIPE FILLED WITH CONCRETE CROWN TOP
2" SCH 40 S.S. VENT PIPE
2–1 1/2" WIDEx3/16" THICK GALV STEEL STAPS SECURED W/ 5/8"DIA STAINLESS STEEL BOLTS
2"–90° S.S. BEND N.P.T.
2"–180° S.S. RETURN, W/ FLANGES
INSECT SCREEN #16 MESH #316 STAINLESS STEEL W/INSULATING GASKET BETWEEN FLANGES
PROVIDE 2–2" WIDE STRIPS OF REFLECTORIZED TAPE ON BOLLARD, PAINT BOLLARD AND VENT PIPING YELLOW
3'–0"
4'–0" MIN SEE NOTE 2
NATURAL GROUND
2'–0"
1'–0"
2000 PSI CLASS "B" CONCRETE AROUND BOLLARD
18" DIA

VENT PIPE WITH BOLLARD

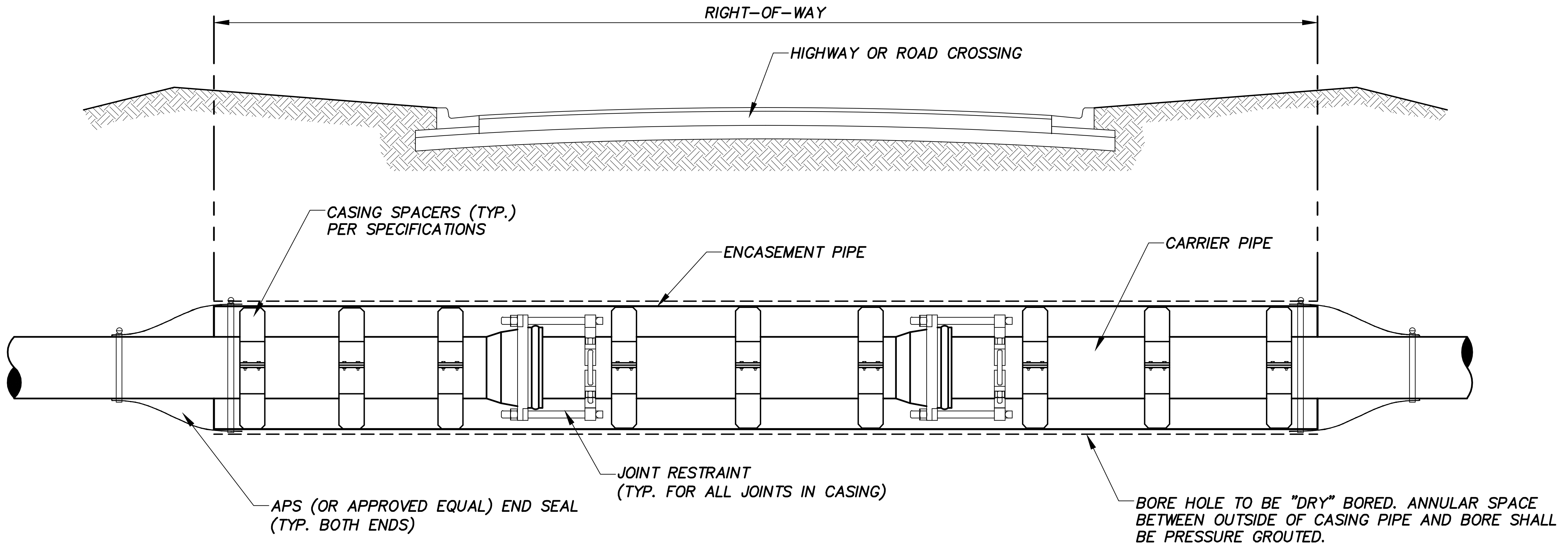
NOTES:

1. PROVIDE RAM–NEK JOINT SEAL, OR APPROVED EQUAL, BETWEEN PRECAST SEGMENTS OF THE MANHOLE.
2. VERIFY THAT LOCATION OF SCREEN IS 1 FOOT ABOVE 100–YEAR FLOOD PLAIN ELEVATION OR 4 FEET ABOVE NATURAL GROUND WHICHEVER IS HIGHER.
3. REFER TO DRAWINGS FOR LOCATIONS OF AIR RELEASE VALVE AND MANHOLES.
4. MANHOLE BASE SHALL BE A PRECAST SECTION WITH PROPER SIZED KNOCK OUTS FOR PROPOSED WATER LINE. SEAL AROUND WATER LINE AND MANHOLE AS INDICATED.
5. STRUCTURAL FILL: COARSE AGGREGATE TYPE A1 OR A2.

4130 COMBINATION AIR VALVE

N.T.S.

G10 NOT USED


RIGHT–OF–WAY
HIGHWAY OR ROAD CROSSING
CASING SPACERS (TYP.) PER SPECIFICATIONS
ENCASEMENT PIPE
CARRIER PIPE
JOINT RESTRAINT (TYP. FOR ALL JOINTS IN CASING)
APS (OR APPROVED EQUAL) END SEAL (TYP. BOTH ENDS)
BORE HOLE TO BE "DRY" BORED. ANNULAR SPACE BETWEEN OUTSIDE OF CASING PIPE AND BORE SHALL BE PRESSURE GROUTED.

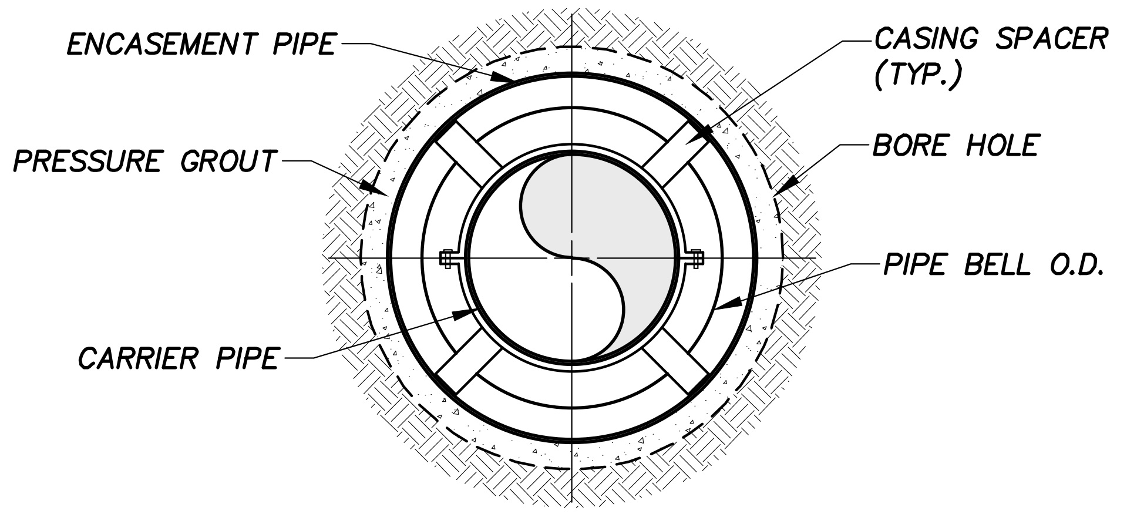
LONGITUDINAL SECTION

CASING TABLE

NOMINAL PIPE SIZE DIA (INCHES)	WATERLINE CASING SIZE INSIDE DIA (INCHES)	WASTEWATER CASING SIZE INSIDE DIA (INCHES)
4"	12"	12"
6"	16"	20"
8"	16"	20"
10"	18"	20"
12"	24"	24"
14"	24"	24"
16"	30"	30"
18"	30"	30"
20"	36"	36"
24"	36"	36"

NOTES:

1. ENCASEMENT PIPE TO BE SOLID WELDED SMOOTH STEEL PIPE PER TECHNICAL SPECIFICATIONS.
2. CONTRACTOR TO TAKE INTO CONSIDERATION THE SIZE AND LIMITS OF PIPE RESTRAINTS WHEN INSTALLING CASING PIPE TO ALLOW FOR ADEQUATE CLEARANCE.
3. SPACERS TO BE PLACED A MINIMUM OF 1' BACK FROM EACH JOINT THAT FALLS WITHIN CASING. A GREATER SET–BACK MAY BE REQUIRED FOR LARGER PIPE. REFERENCE STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION ON SPACING OF SUPPORTS.



CROSS SECTION

4160 BORE AND CASE

N.T.S.

REV.	DESCRIPTION	DATE
1	4130 - CLASS A	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

WATERLINE DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
4-003

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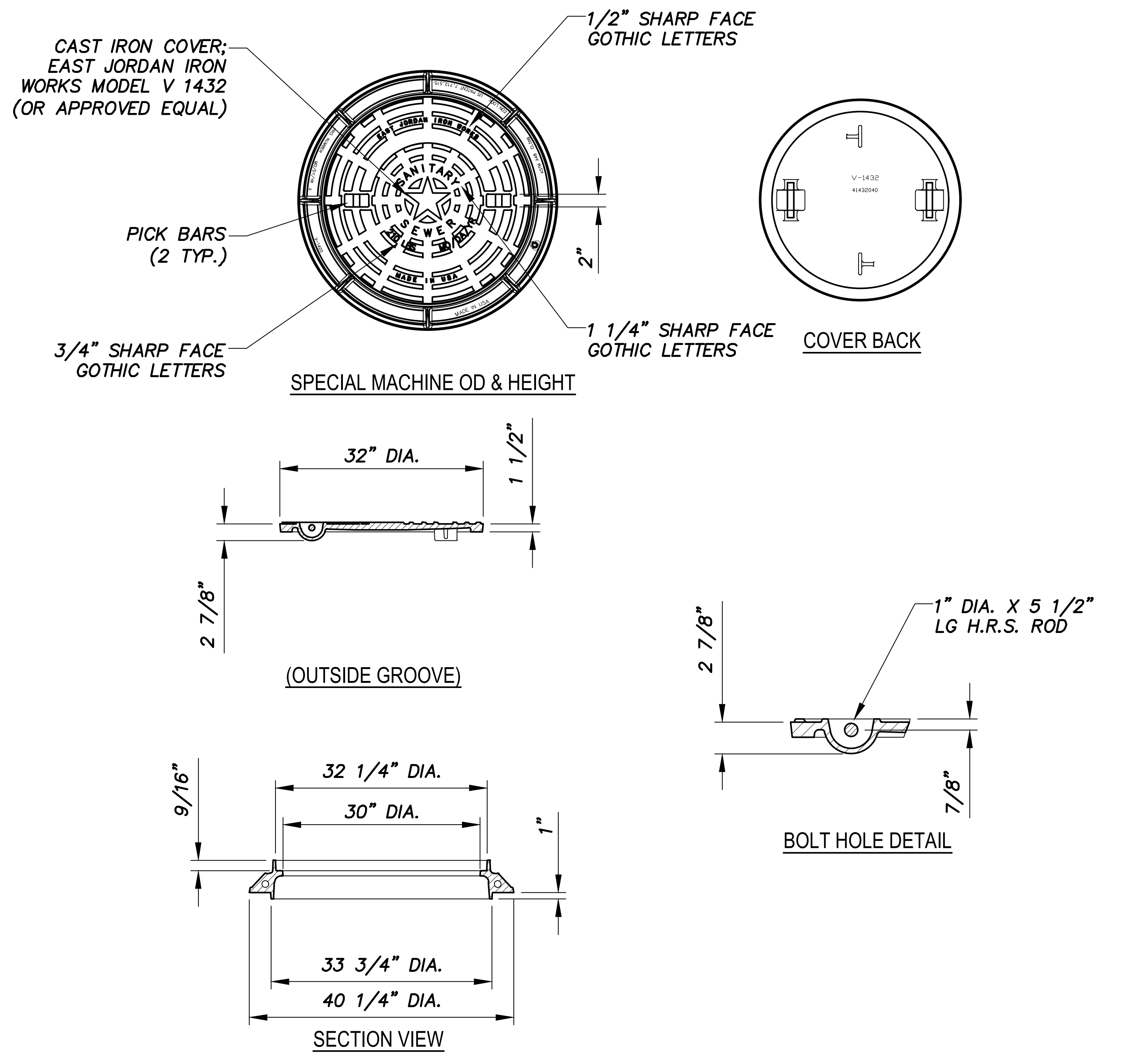
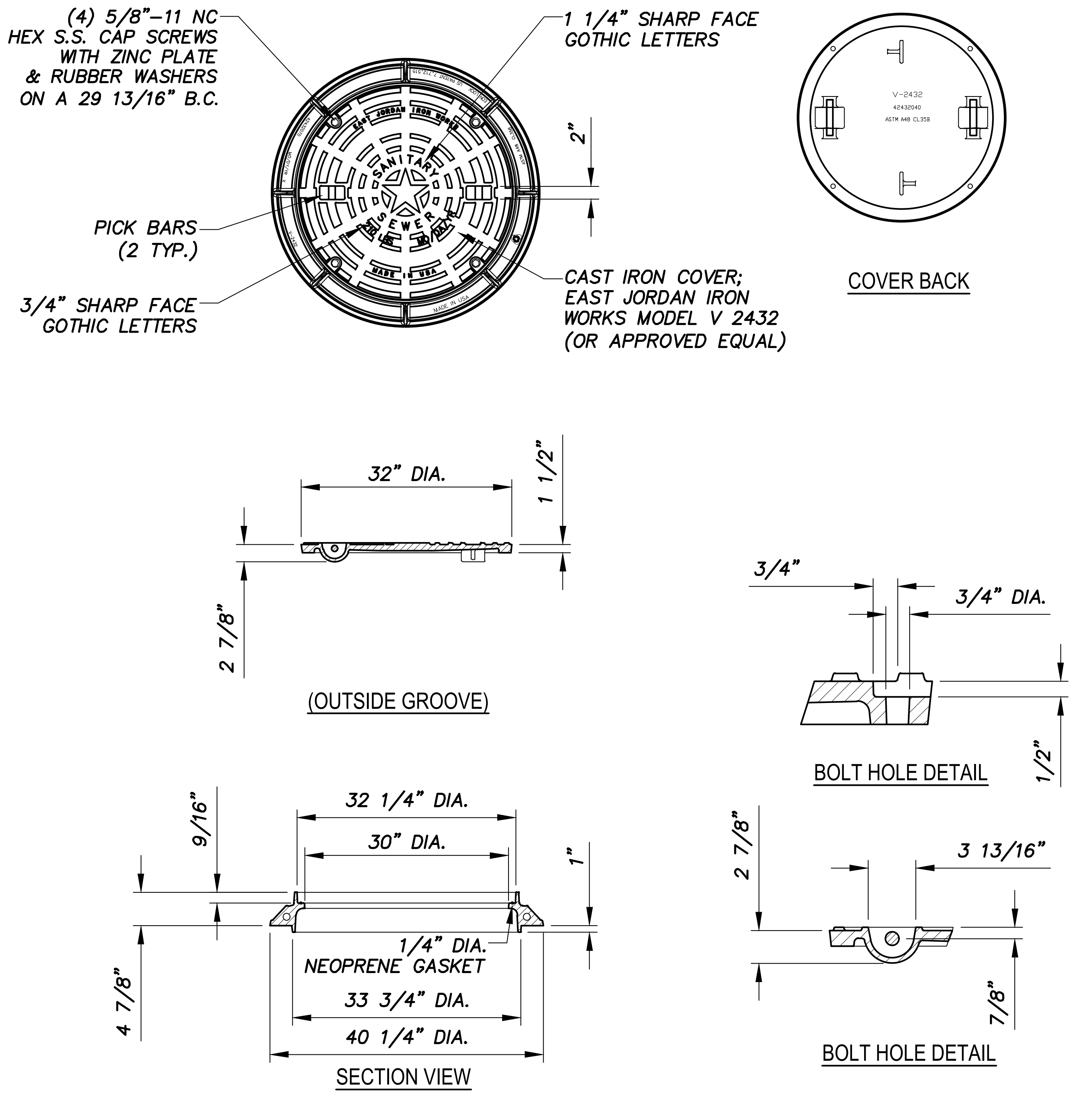

CAST IRON COVER; EAST JORDAN IRON WORKS MODEL V 1432 (OR APPROVED EQUAL)
1/2" SHARP FACE GOTHIC LETTERS
PICK BARS (2 TYP.)
2"
3/4" SHARP FACE GOTHIC LETTERS
1 1/4" SHARP FACE GOTHIC LETTERS
SPECIAL MACHINE OD & HEIGHT
COVER BACK
32" DIA.
1 1/2"
2 7/8"
(OUTSIDE GROOVE)
1" DIA. X 5 1/2" LG H.R.S. ROD
2 7/8"
7/8"
BOLT HOLE DETAIL
9/16"
32 1/4" DIA.
30" DIA.
1"
33 3/4" DIA.
40 1/4" DIA.
SECTION VIEW

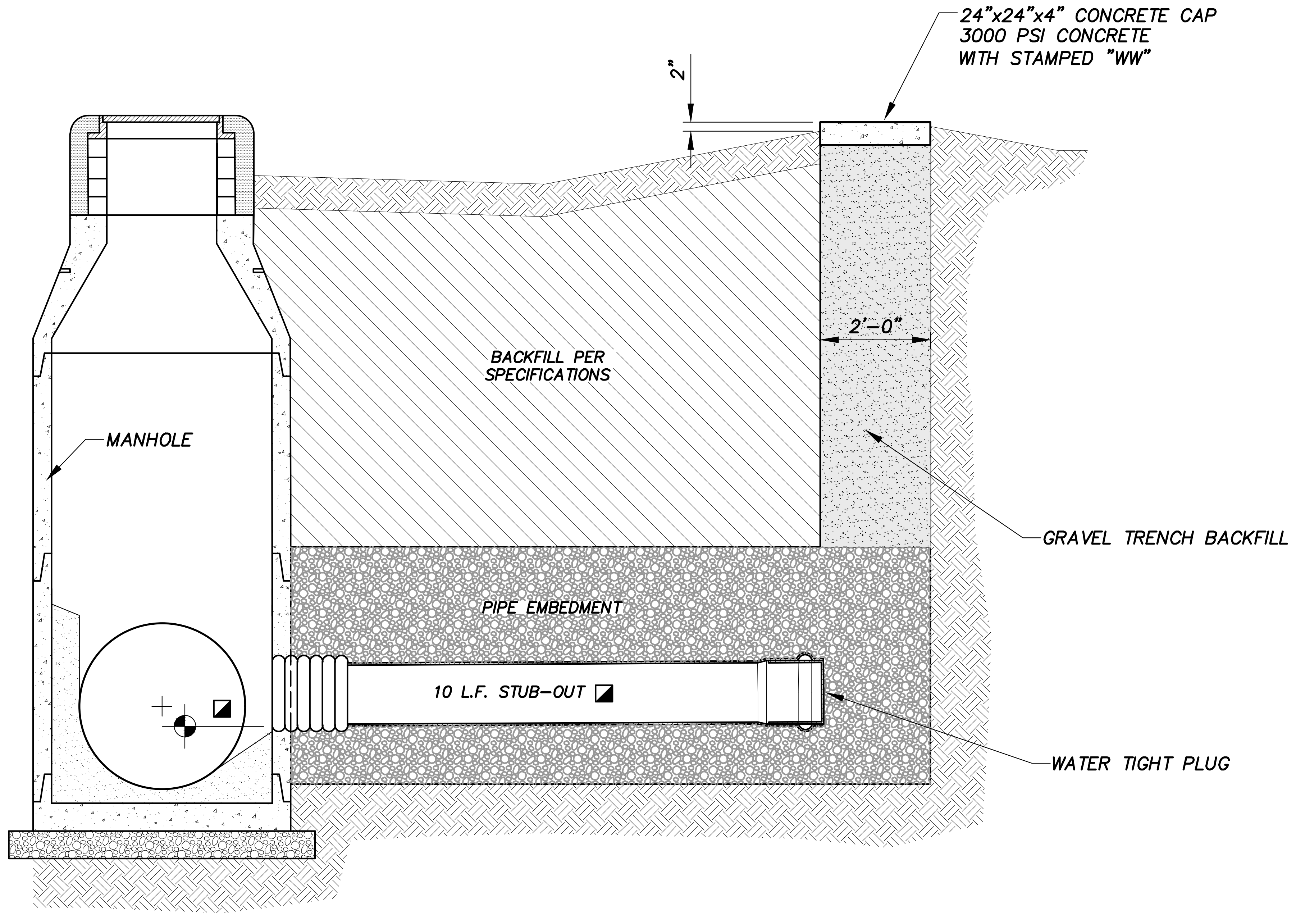
5012 MANHOLE FRAME & COVER

N.T.S.


(4) 5/8"-11 NC HEX S.S. CAP SCREWS WITH ZINC PLATE & RUBBER WASHERS ON A 29 13/16" B.C.
1 1/4" SHARP FACE GOTHIC LETTERS
PICK BARS (2 TYP.)
2"
3/4" SHARP FACE GOTHIC LETTERS
CAST IRON COVER; EAST JORDAN IRON WORKS MODEL V 2432 (OR APPROVED EQUAL)
COVER BACK
32" DIA.
1 1/2"
2 7/8"
(OUTSIDE GROOVE)
3/4"
3/4" DIA.
1/2"
BOLT HOLE DETAIL
9/16"
32 1/4" DIA.
30" DIA.
1"
4 7/8"
1/4" DIA. NEOPRENE GASKET
33 3/4" DIA.
40 1/4" DIA.
SECTION VIEW
2 7/8"
3 13/16"
7/8"
BOLT HOLE DETAIL

5022 WATERTIGHT/AIRTIGHT MANHOLE FRAME & COVER

N.T.S.


24"x24"x4" CONCRETE CAP 3000 PSI CONCRETE WITH STAMPED "WW"
2"
2'-0"
BACKFILL PER SPECIFICATIONS
MANHOLE
GRAVEL TRENCH BACKFILL
PIPE EMBEDMENT
10 L.F. STUB-OUT ◪
WATER TIGHT PLUG

◪ RE. PLAN & PROFILE SHEETS FOR SLOPE AND FLOWLINE ELEVATIONS

5030 WASTEWATER MANHOLE STUB-OUT DETAIL

N.T.S.

A8 NOT USED

REV.	DESCRIPTION	DATE
1	5012 & 5022	6-20-18

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

SANITARY SEWER DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
5-000

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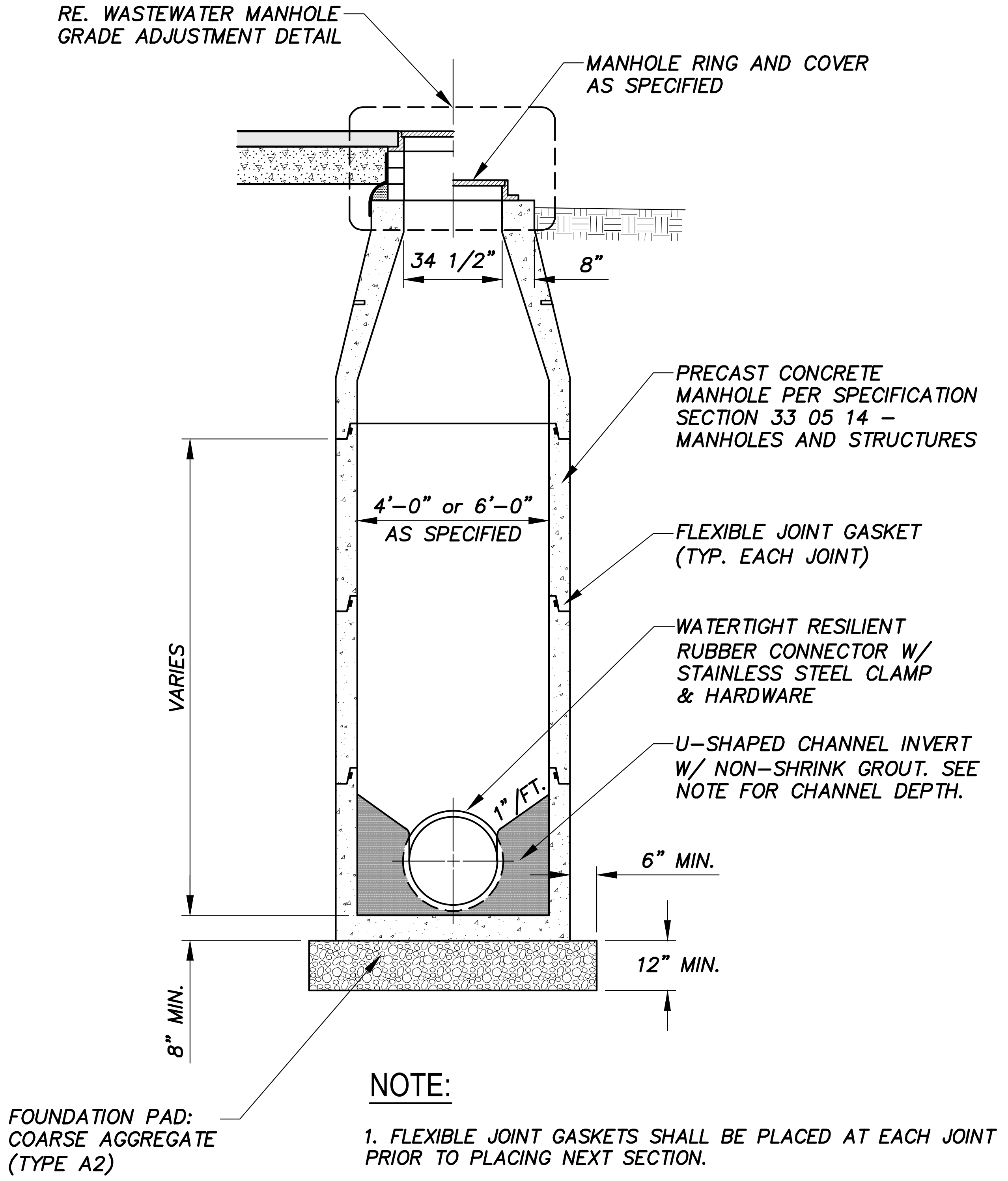
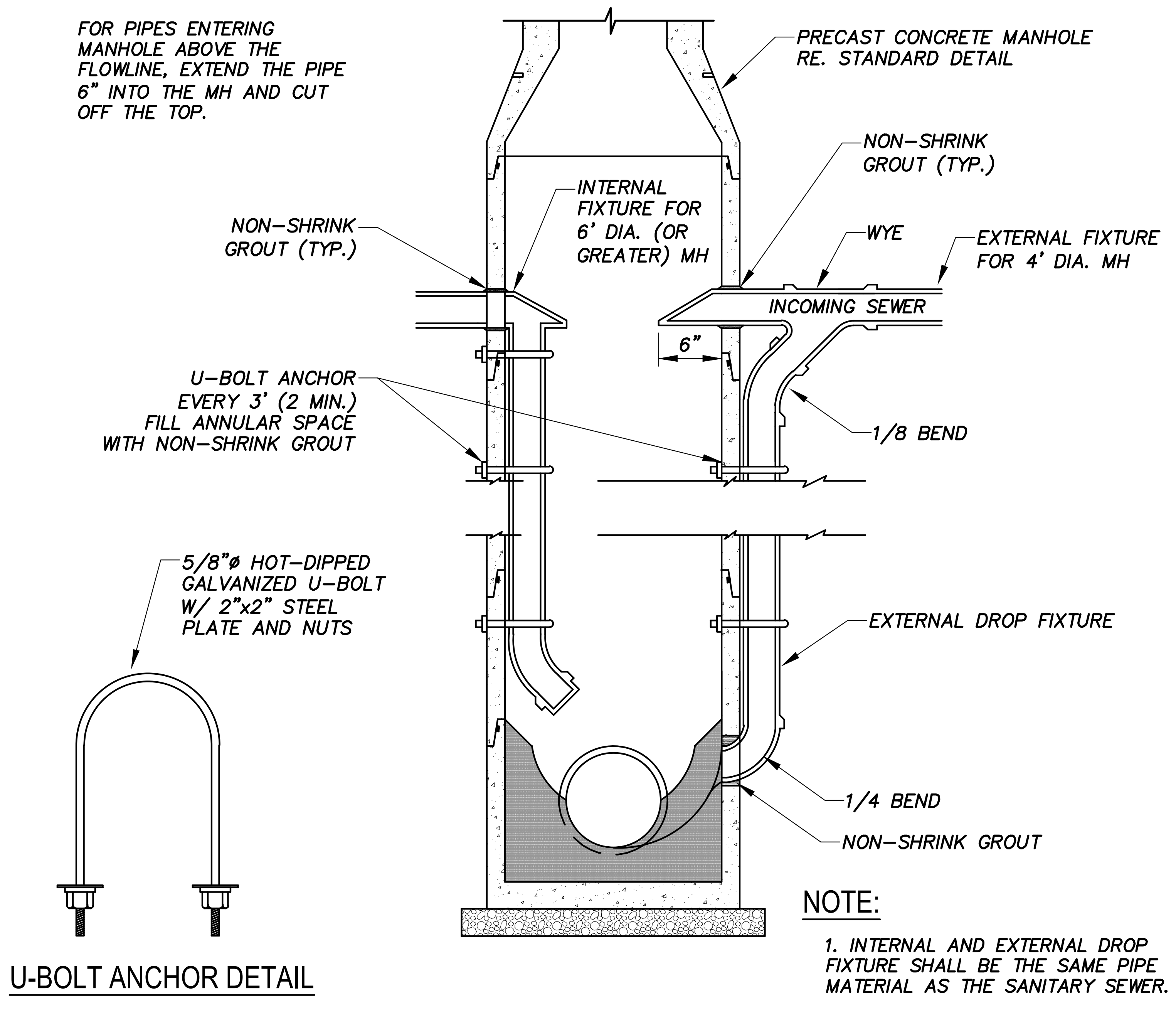

RE. WASTEWATER MANHOLE GRADE ADJUSTMENT DETAIL
MANHOLE RING AND COVER AS SPECIFIED
34 1/2"
8"
PRECAST CONCRETE MANHOLE PER SPECIFICATION SECTION 33 05 14 – MANHOLES AND STRUCTURES
4'–0" or 6'–0" AS SPECIFIED
FLEXIBLE JOINT GASKET (TYP. EACH JOINT)
VARIES
WATERTIGHT RESILIENT RUBBER CONNECTOR W/ STAINLESS STEEL CLAMP & HARDWARE
U–SHAPED CHANNEL INVERT W/ NON–SHRINK GROUT. SEE NOTE FOR CHANNEL DEPTH.
1"/FT.
6" MIN.
12" MIN.
8" MIN.
FOUNDATION PAD: COARSE AGGREGATE (TYPE A2)

NOTE:

1. FLEXIBLE JOINT GASKETS SHALL BE PLACED AT EACH JOINT PRIOR TO PLACING NEXT SECTION.

5040 PRECAST CONCRETE MANHOLE

N.T.S.

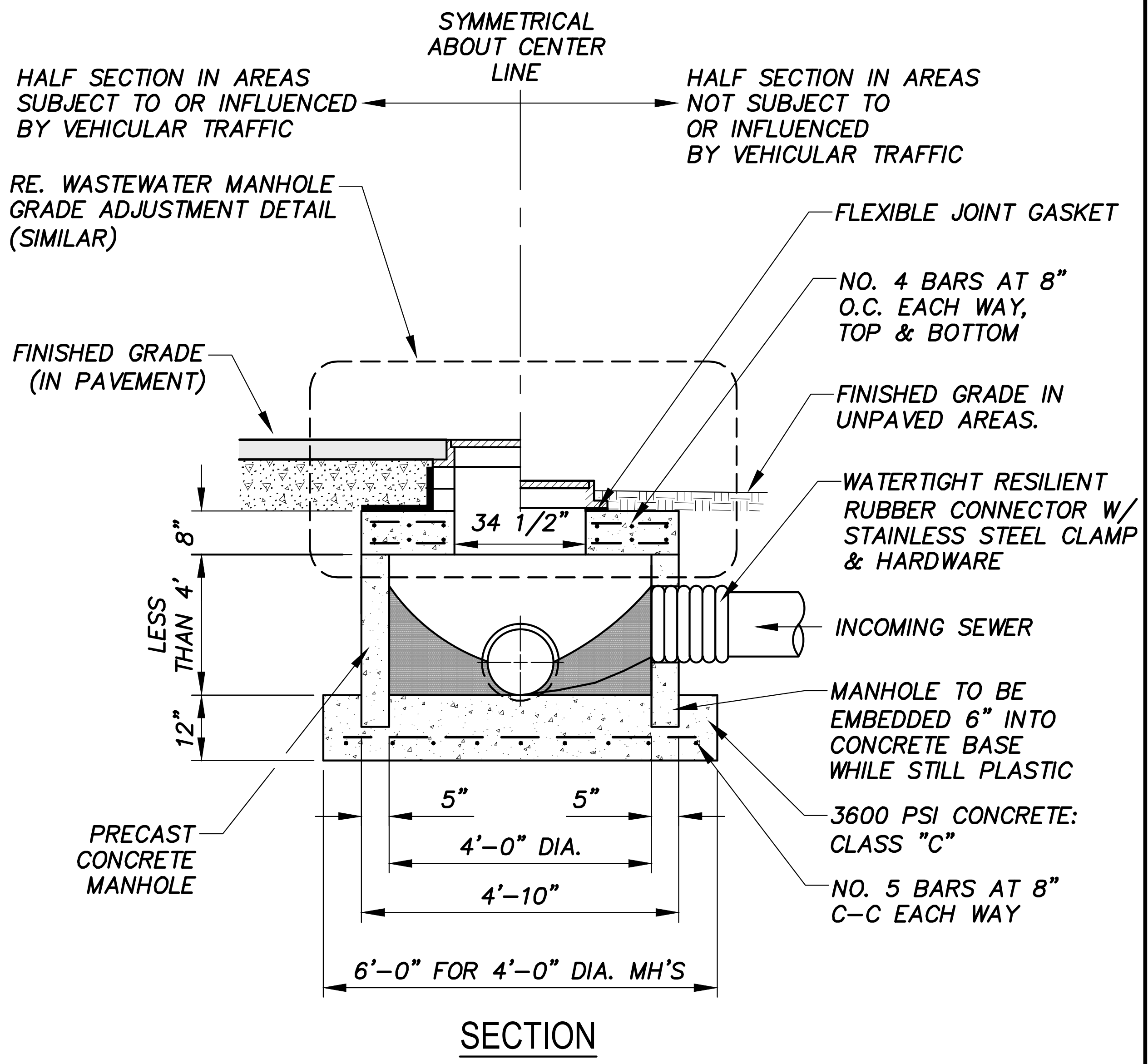

FOR PIPES ENTERING MANHOLE ABOVE THE FLOWLINE, EXTEND THE PIPE 6" INTO THE MH AND CUT OFF THE TOP.
PRECAST CONCRETE MANHOLE RE. STANDARD DETAIL
NON–SHRINK GROUT (TYP.)
INTERNAL FIXTURE FOR 6' DIA. (OR GREATER) MH
NON–SHRINK GROUT (TYP.)
WYE
EXTERNAL FIXTURE FOR 4' DIA. MH
INCOMING SEWER
6"
U–BOLT ANCHOR EVERY 3' (2 MIN.) FILL ANNULAR SPACE WITH NON–SHRINK GROUT
1/8 BEND
5/8"ø HOT–DIPPED GALVANIZED U–BOLT W/ 2"x2" STEEL PLATE AND NUTS
EXTERNAL DROP FIXTURE
1/4 BEND
NON–SHRINK GROUT
U-BOLT ANCHOR DETAIL

NOTE:

1. INTERNAL AND EXTERNAL DROP FIXTURE SHALL BE THE SAME PIPE MATERIAL AS THE SANITARY SEWER.

5050 WASTEWATER MANHOLE DROP FIXTURE

N.T.S.

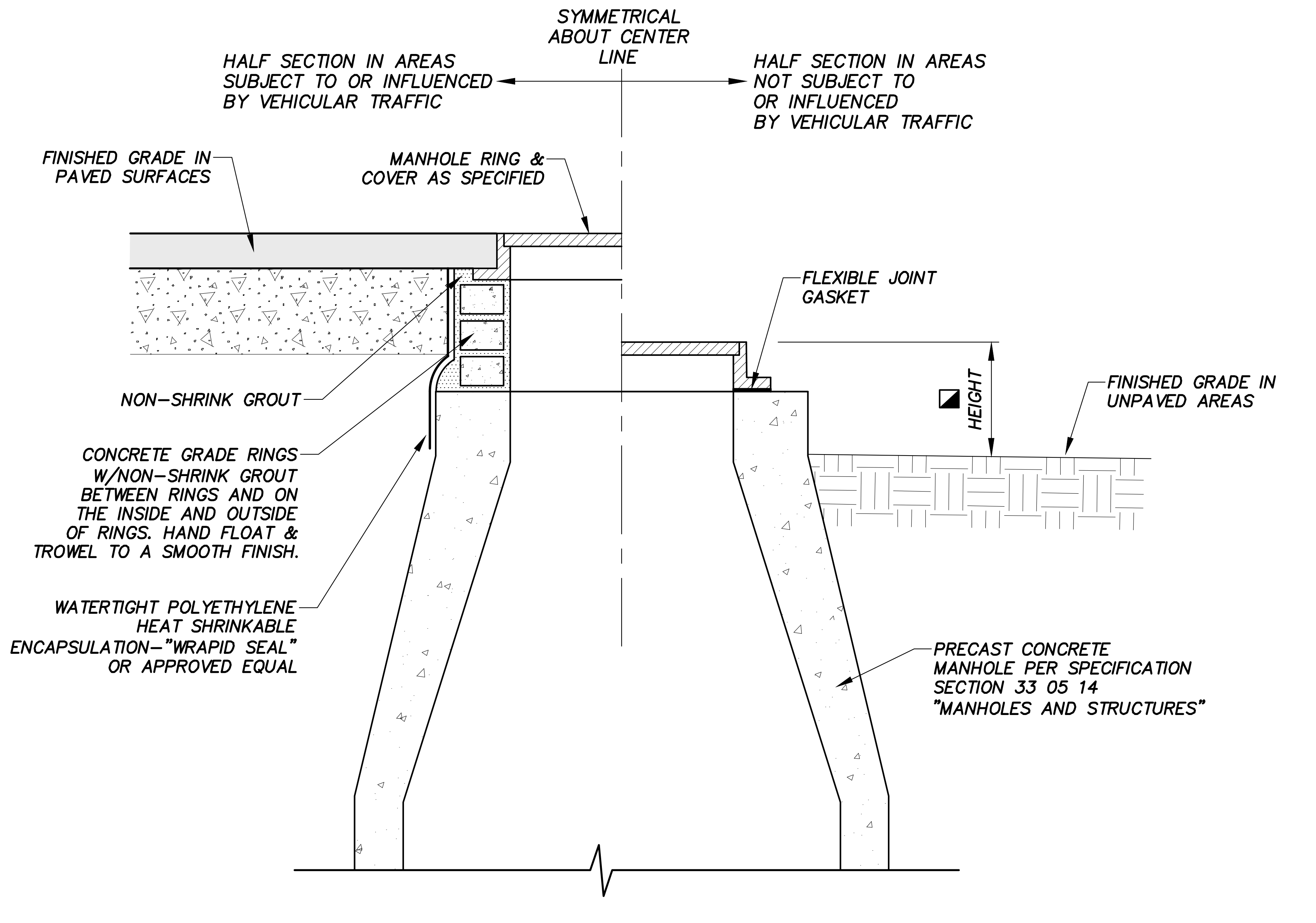

SYMMETRICAL ABOUT CENTER LINE
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
RE. WASTEWATER MANHOLE GRADE ADJUSTMENT DETAIL (SIMILAR)
FLEXIBLE JOINT GASKET
NO. 4 BARS AT 8" O.C. EACH WAY, TOP & BOTTOM
FINISHED GRADE (IN PAVEMENT)
FINISHED GRADE IN UNPAVED AREAS.
WATERTIGHT RESILIENT RUBBER CONNECTOR W/ STAINLESS STEEL CLAMP & HARDWARE
8"
34 1/2"
LESS THAN 4'
INCOMING SEWER
12"
MANHOLE TO BE EMBEDDED 6" INTO CONCRETE BASE WHILE STILL PLASTIC
5"
5"
3600 PSI CONCRETE: CLASS "C"
PRECAST CONCRETE MANHOLE
4'–0" DIA.
4'–10"
NO. 5 BARS AT 8" C–C EACH WAY
6'–0" FOR 4'–0" DIA. MH'S
SECTION

5060 SHALLOW WASTEWATER MANHOLE DETAIL

N.T.S.

MANHOLE NOTES

1. PRECAST CONCRETE MANHOLES SHALL BE REINFORCED AND CONCRETE SHALL BE SULFATE RESISTANT WITH AN ANTI–MICROBIAL AGENT AS PER SPECIFICATION SECTION 33 05 14 – MANHOLES AND STRUCTURES.
2. INVERTS SHALL BE SHAPED AND FINISHED BY HAND FLOAT AND TROWEL.
3. INVERT CHANNEL DEPTHS SHALL BE AS FOLLOWS:
   A. OUTFLOW PIPE < 15" DIA.: CHANNEL DEPTH = 1/2 OF OUTFLOW PIPE DIA.
   B. OUTFLOW PIPE > 15" DIA. BUT < 24" DIA.: CHANNEL DEPTH = 3/4'S OF OUTFLOW PIPE DIAMETER
   C. OUTFLOW PIPE > 24" DIA.: CHANNEL DEPTH = OUTFLOW PIPE DIAMETER.
4. 4' DIAMETER MANHOLES TO BE CONSTRUCTED ON PIPES 18" IN DIAMETER AND SMALLER.
5. 6' DIAMETER MANHOLES TO BE CONSTRUCTED ON PIPES 21" THROUGH 36" IN DIAMETER.
6. A MAXIMUM OF 2 INCHES OF NON–SHRINK GROUT MAY BE USED TO BRING RING AND COVER TO GRADE.
7. A MINIMUM OF 3 & MAXIMUM OF 4 GRADE RINGS TO BE APPLIED TO MANHOLES TO ALLOW FOR FUTURE ADJUSTMENT. GRADE RING & FRAME/ RING AND COVER SHALL BE SET IN A BED OF NON–SHRINK GROUT.


SYMMETRICAL ABOUT CENTER LINE
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
FINISHED GRADE IN PAVED SURFACES
MANHOLE RING & COVER AS SPECIFIED
FLEXIBLE JOINT GASKET
NON–SHRINK GROUT
HEIGHT
FINISHED GRADE IN UNPAVED AREAS
CONCRETE GRADE RINGS W/NON–SHRINK GROUT BETWEEN RINGS AND ON THE INSIDE AND OUTSIDE OF RINGS. HAND FLOAT & TROWEL TO A SMOOTH FINISH.
WATERTIGHT POLYETHYLENE HEAT SHRINKABLE ENCAPSULATION–"WRAPID SEAL" OR APPROVED EQUAL
PRECAST CONCRETE MANHOLE PER SPECIFICATION SECTION 33 05 14 "MANHOLES AND STRUCTURES"

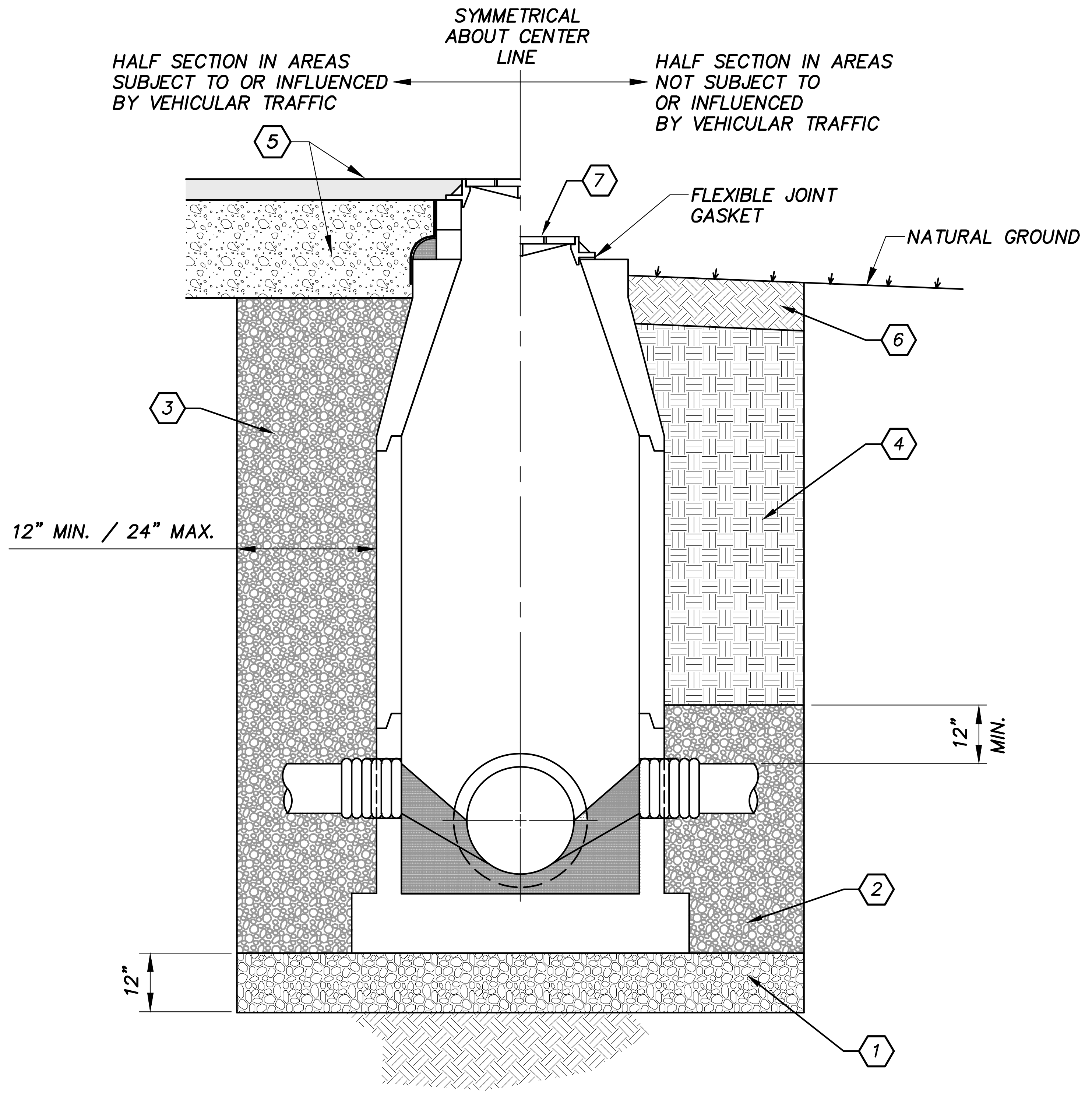
◪ HEIGHT ABOVE FINISHED GRADE

1. 6" MIN. & 12" MAX.

2. WHEN LOCATED IN A DRAINAGE–WAY, TOP OF RIM ELEVATION SHALL BE ABOVE THE 25–YEAR WATER SURFACE ELEVATION.

5070 WASTEWATER MANHOLE GRADE ADJUSTMENT DETAIL

N.T.S.


SYMMETRICAL ABOUT CENTER LINE
HALF SECTION IN AREAS SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
HALF SECTION IN AREAS NOT SUBJECT TO OR INFLUENCED BY VEHICULAR TRAFFIC
5
7
FLEXIBLE JOINT GASKET
NATURAL GROUND
6
3
4
12" MIN. / 24" MAX.
12" MIN.
2
12"
1

MATERIAL SCHEDULE

① FOUNDATION: COARSE AGGREGATE (TYPE A2).

② PIPE EMBEDMENT MATERIAL SHALL BE PLACED ALL AROUND MANHOLE PER SPECIFICATION SECTION 31 23 17 – TRENCHING.

③ TRENCH BACKFILL PER SPECIFICATION SECTION 31 23 17 – TRENCHING (IN AREAS INFLUENCED BY VEHICULAR TRAFFIC)

④ TRENCH BACKFILL MATERIAL PER SPECIFICATION SECTION 31 23 17 – TRENCHING.

⑤ NEW PAVEMENT, BASE (AND SUBGRADE) AS PER THE DRAWINGS AND SPECIFICATIONS.
–OR–
REFERENCE "SURFACE REPLACEMENT DETAIL" WHEN TRENCHING IN EXISTING PAVEMENT.

⑥ TOPSOIL, 12 INCHES THICK, EXCAVATED, SALVAGED, AND STOCKPILED FROM ORIGINAL GROUND SURFACE OF THE TRENCH (AND OR UTILITY EASEMENT) AND REPLACED AFTER INSTALLATION OR PIPELINE.

⑦ RE: WASTEWATER MANHOLE GRADE ADJUSTMENT DETAIL.

5080 WASTEWATER MANHOLE BACKFILL DETAIL

N.T.S.

REV.	DESCRIPTION	DATE
1	5060 - CLASS A CONC.	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

SANITARY SEWER DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
5-001

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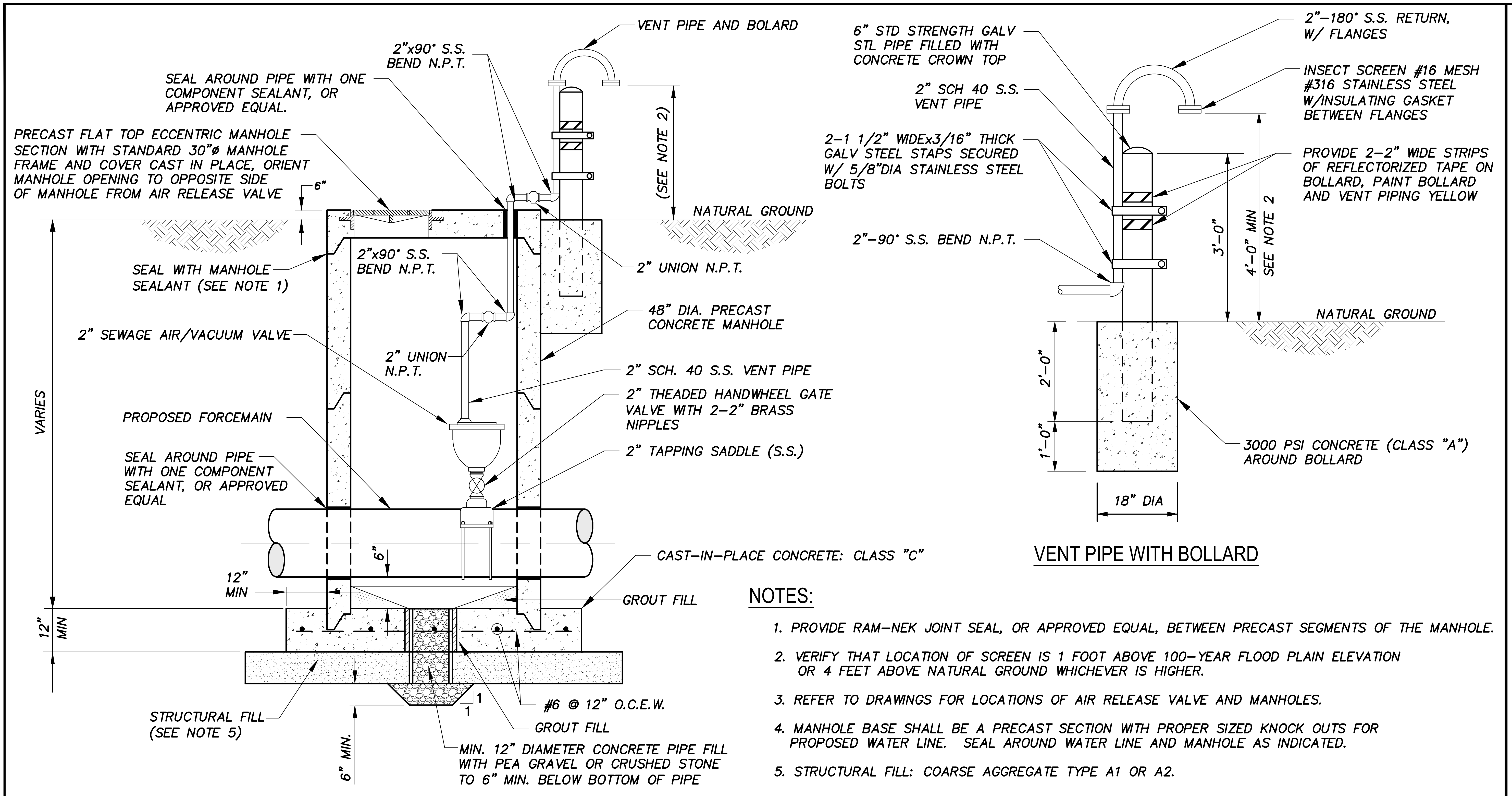

VENT PIPE AND BOLARD
2"x90° S.S. BEND N.P.T.
SEAL AROUND PIPE WITH ONE COMPONENT SEALANT, OR APPROVED EQUAL.
PRECAST FLAT TOP ECCENTRIC MANHOLE SECTION WITH STANDARD 30"ø MANHOLE FRAME AND COVER CAST IN PLACE, ORIENT MANHOLE OPENING TO OPPOSITE SIDE OF MANHOLE FROM AIR RELEASE VALVE
6"
(SEE NOTE 2)
NATURAL GROUND
SEAL WITH MANHOLE SEALANT (SEE NOTE 1)
2"x90° S.S. BEND N.P.T.
2" UNION N.P.T.
48" DIA. PRECAST CONCRETE MANHOLE
2" SEWAGE AIR/VACUUM VALVE
2" UNION N.P.T.
2" SCH. 40 S.S. VENT PIPE
2" THEADED HANDWHEEL GATE VALVE WITH 2-2" BRASS NIPPLES
PROPOSED FORCEMAIN
2" TAPPING SADDLE (S.S.)
VARIES
SEAL AROUND PIPE WITH ONE COMPONENT SEALANT, OR APPROVED EQUAL
6"
CAST-IN-PLACE CONCRETE: CLASS "C"
12" MIN
GROUT FILL
12" MIN
1
1
#6 @ 12" O.C.E.W.
STRUCTURAL FILL (SEE NOTE 5)
GROUT FILL
6" MIN.
MIN. 12" DIAMETER CONCRETE PIPE FILL WITH PEA GRAVEL OR CRUSHED STONE TO 6" MIN. BELOW BOTTOM OF PIPE
6" STD STRENGTH GALV STL PIPE FILLED WITH CONCRETE CROWN TOP
2" SCH 40 S.S. VENT PIPE
2-1 1/2" WIDEx3/16" THICK GALV STEEL STAPS SECURED W/ 5/8"DIA STAINLESS STEEL BOLTS
2"-90° S.S. BEND N.P.T.
2"-180° S.S. RETURN, W/ FLANGES
INSECT SCREEN #16 MESH #316 STAINLESS STEEL W/INSULATING GASKET BETWEEN FLANGES
PROVIDE 2-2" WIDE STRIPS OF REFLECTORIZED TAPE ON BOLLARD, PAINT BOLLARD AND VENT PIPING YELLOW
3'-0"
4'-0" MIN SEE NOTE 2
NATURAL GROUND
2'-0"
1'-0"
3000 PSI CONCRETE (CLASS "A") AROUND BOLLARD
18" DIA

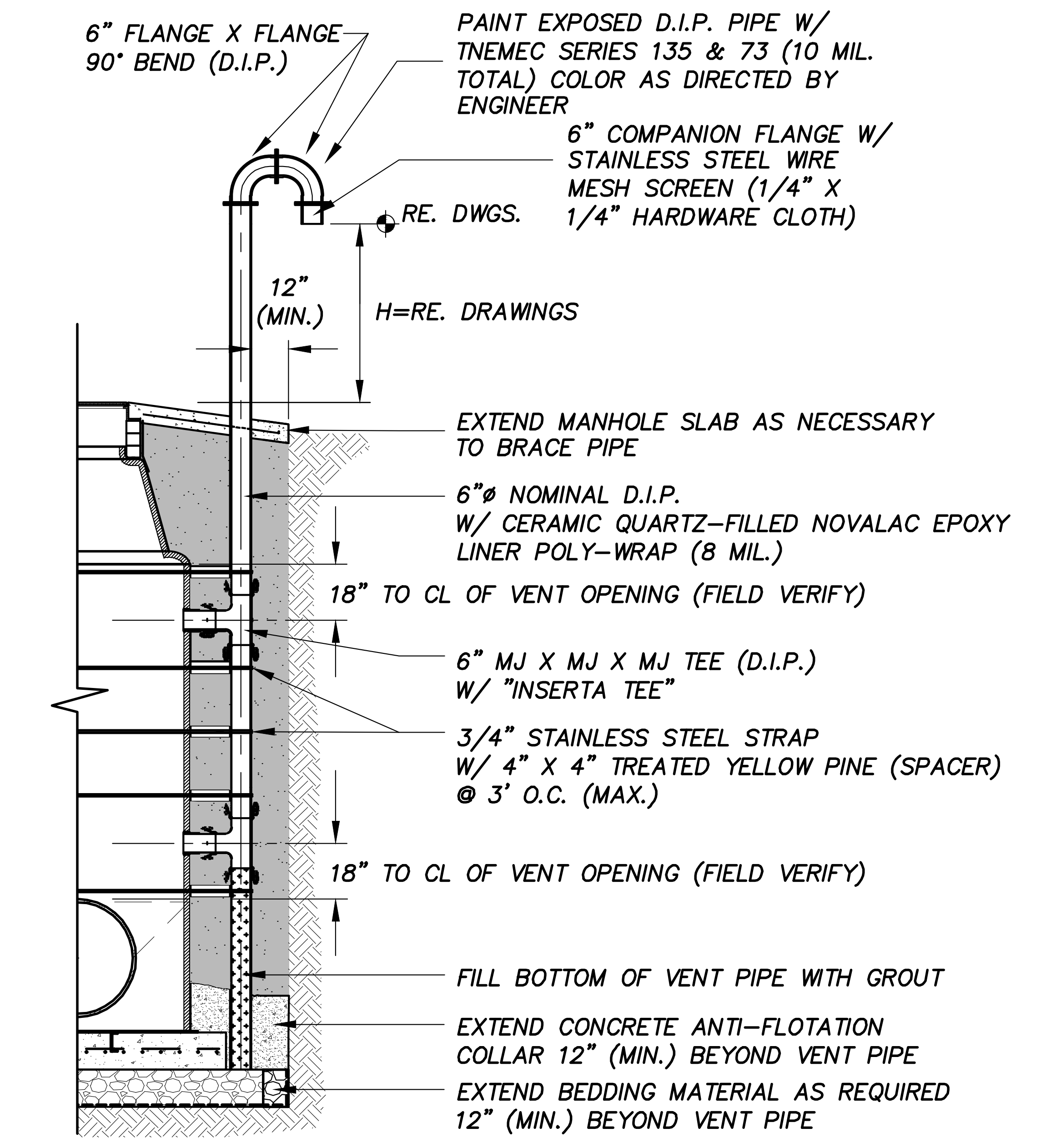
VENT PIPE WITH BOLLARD

NOTES:

1. PROVIDE RAM-NEK JOINT SEAL, OR APPROVED EQUAL, BETWEEN PRECAST SEGMENTS OF THE MANHOLE.
2. VERIFY THAT LOCATION OF SCREEN IS 1 FOOT ABOVE 100-YEAR FLOOD PLAIN ELEVATION OR 4 FEET ABOVE NATURAL GROUND WHICHEVER IS HIGHER.
3. REFER TO DRAWINGS FOR LOCATIONS OF AIR RELEASE VALVE AND MANHOLES.
4. MANHOLE BASE SHALL BE A PRECAST SECTION WITH PROPER SIZED KNOCK OUTS FOR PROPOSED WATER LINE. SEAL AROUND WATER LINE AND MANHOLE AS INDICATED.
5. STRUCTURAL FILL: COARSE AGGREGATE TYPE A1 OR A2.

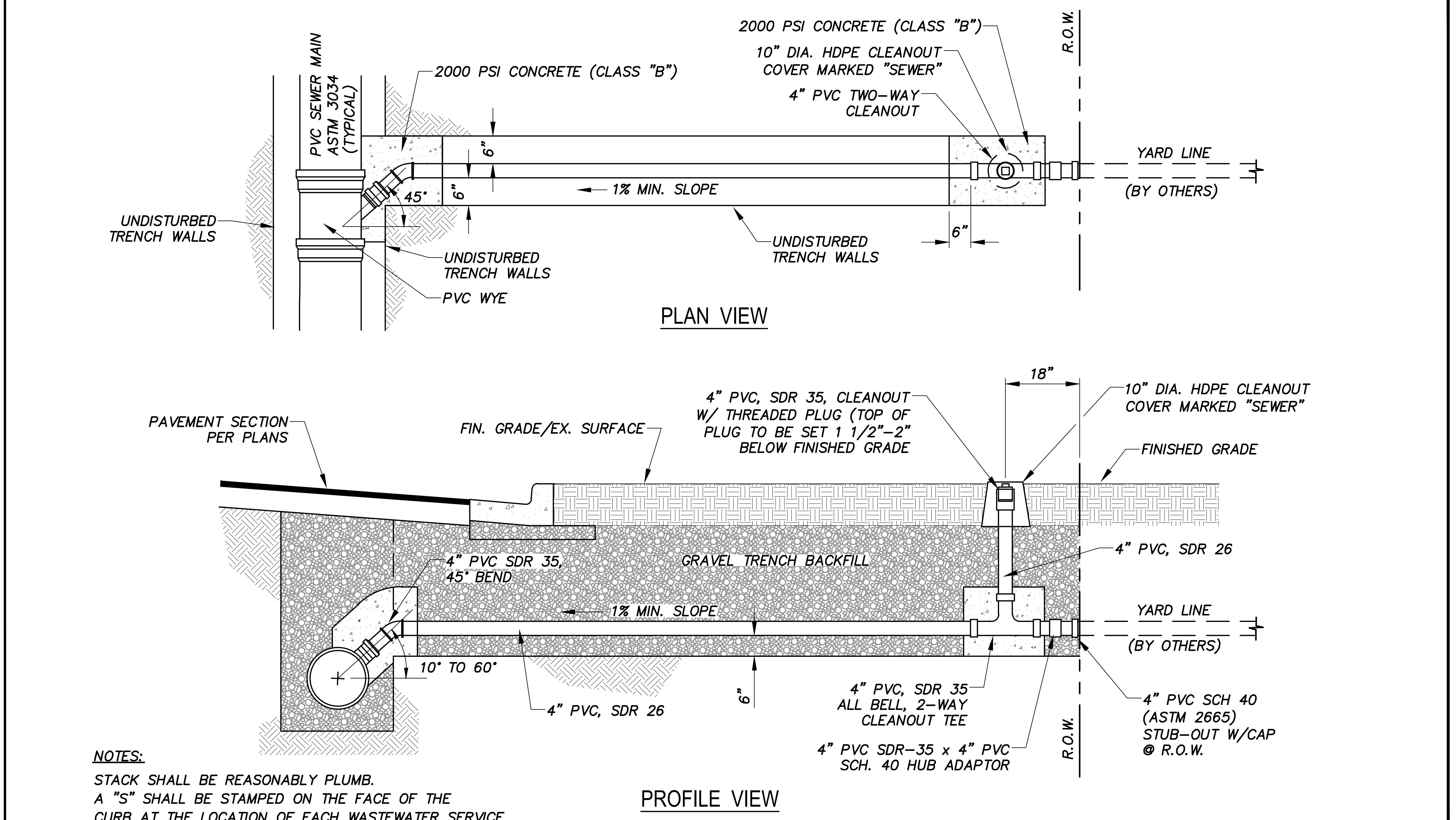
5090 SEWAGE AIR/VACUUM VALVE

N.T.S.


6" FLANGE X FLANGE 90° BEND (D.I.P.)
PAINT EXPOSED D.I.P. PIPE W/ TNEMEC SERIES 135 & 73 (10 MIL. TOTAL) COLOR AS DIRECTED BY ENGINEER
6" COMPANION FLANGE W/ STAINLESS STEEL WIRE MESH SCREEN (1/4" X 1/4" HARDWARE CLOTH)
RE. DWGS.
12" (MIN.)
H=RE. DRAWINGS
EXTEND MANHOLE SLAB AS NECESSARY TO BRACE PIPE
6"ø NOMINAL D.I.P. W/ CERAMIC QUARTZ-FILLED NOVALAC EPOXY LINER POLY-WRAP (8 MIL.)
18" TO CL OF VENT OPENING (FIELD VERIFY)
6" MJ X MJ X MJ TEE (D.I.P.) W/ "INSERTA TEE"
3/4" STAINLESS STEEL STRAP W/ 4" X 4" TREATED YELLOW PINE (SPACER) @ 3' O.C. (MAX.)
18" TO CL OF VENT OPENING (FIELD VERIFY)
FILL BOTTOM OF VENT PIPE WITH GROUT
EXTEND CONCRETE ANTI-FLOTATION COLLAR 12" (MIN.) BEYOND VENT PIPE
EXTEND BEDDING MATERIAL AS REQUIRED 12" (MIN.) BEYOND VENT PIPE

5100 MANHOLE VENT (HALF SECTION)

SCALE: ①


2000 PSI CONCRETE (CLASS "B")
10" DIA. HDPE CLEANOUT COVER MARKED "SEWER"
4" PVC TWO-WAY CLEANOUT
R.O.W.
PVC SEWER MAIN ASTM 3034 (TYPICAL)
2000 PSI CONCRETE (CLASS "B")
6"
45°
6"
1% MIN. SLOPE
YARD LINE
(BY OTHERS)
UNDISTURBED TRENCH WALLS
6"
UNDISTURBED TRENCH WALLS
UNDISTURBED TRENCH WALLS
PVC WYE
PAVEMENT SECTION PER PLANS
FIN. GRADE/EX. SURFACE
4" PVC, SDR 35, CLEANOUT W/ THREADED PLUG (TOP OF PLUG TO BE SET 1 1/2"-2" BELOW FINISHED GRADE
18"
10" DIA. HDPE CLEANOUT COVER MARKED "SEWER"
FINISHED GRADE
GRAVEL TRENCH BACKFILL
4" PVC SDR 35, 45° BEND
4" PVC, SDR 26
1% MIN. SLOPE
YARD LINE
(BY OTHERS)
10" TO 60"
4" PVC, SDR 26
6"
4" PVC, SDR 35 ALL BELL, 2-WAY CLEANOUT TEE
4" PVC SCH 40 (ASTM 2665) STUB-OUT W/CAP @ R.O.W.
4" PVC SDR-35 x 4" PVC SCH. 40 HUB ADAPTOR
R.O.W.

PLAN VIEW

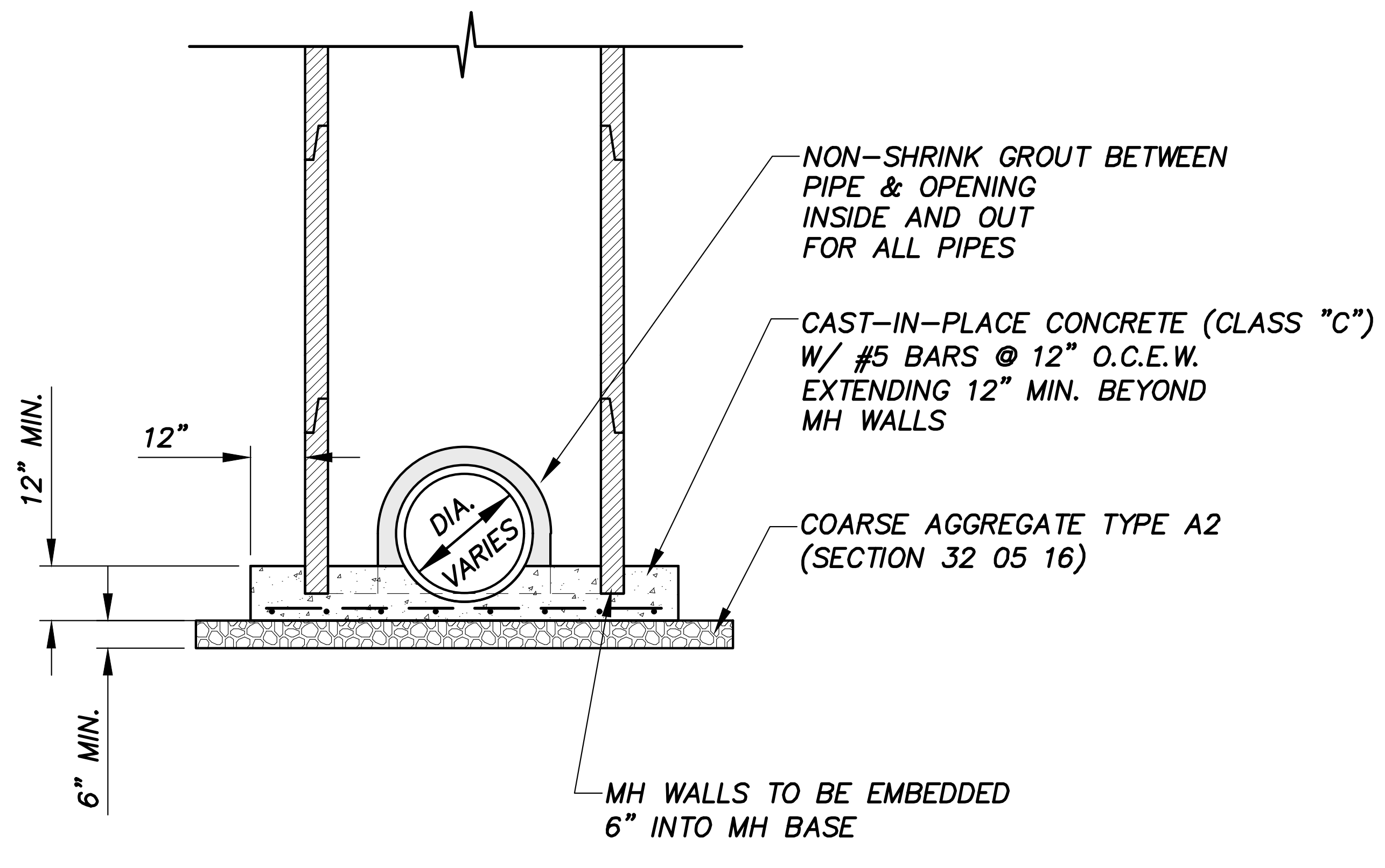
PROFILE VIEW

NOTES:

STACK SHALL BE REASONABLY PLUMB.
A "S" SHALL BE STAMPED ON THE FACE OF THE CURB AT THE LOCATION OF EACH WASTEWATER SERVICE.

5101 4" RESIDENTIAL WASTEWATER SERVICE CONNECTION

N.T.S.


NON-SHRINK GROUT BETWEEN PIPE & OPENING INSIDE AND OUT FOR ALL PIPES
CAST-IN-PLACE CONCRETE (CLASS "C") W/ #5 BARS @ 12" O.C.E.W. EXTENDING 12" MIN. BEYOND MH WALLS
12" MIN.
12"
DIA. VARIES
COARSE AGGREGATE TYPE A2 (SECTION 32 05 16)
6" MIN.
MH WALLS TO BE EMBEDDED 6" INTO MH BASE

5131 MANHOLE WITH "DOGHOUSE" OPENINGS

N.T.S.

① 0 1 2 4 8 12
FULL SIZE = 1/4"=1'-0" - HALF SIZE = 1/8"=1'-0"

REV.	DESCRIPTION	DATE
1	5090 & 5100	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

SANITARY SEWER DETAILS

6-1-2020
DATE

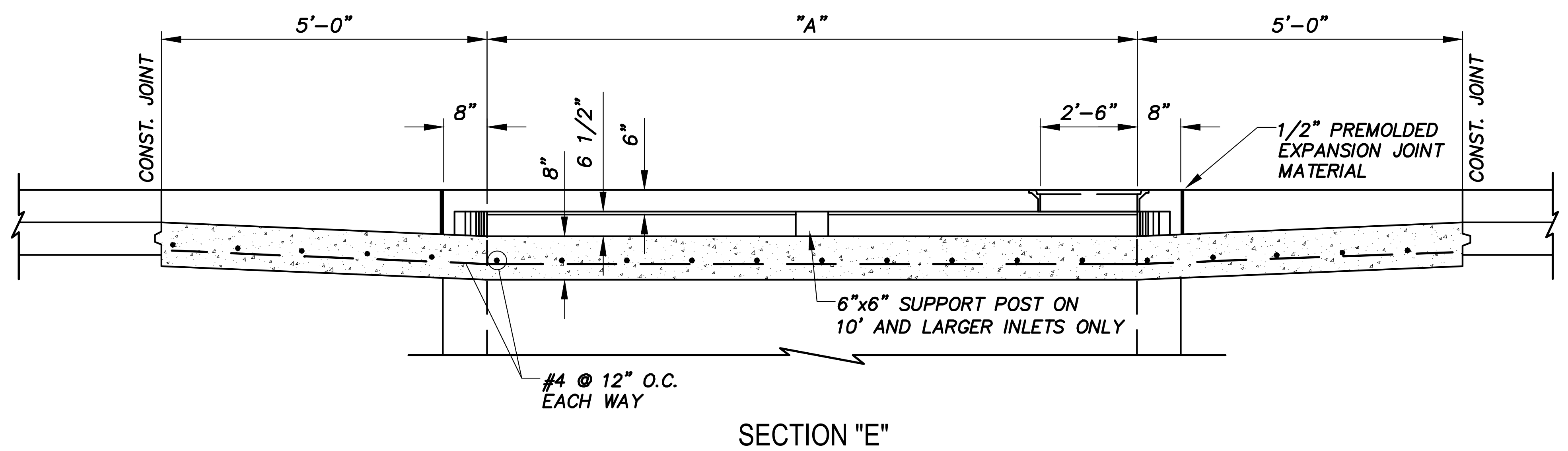
George E. Walker, Jr.
GEORGE E. WALKER, JR.

STATE OF TEXAS
GEORGE E. WALKER, JR.
#65360
REGISTERED PROFESSIONAL ENGINEER

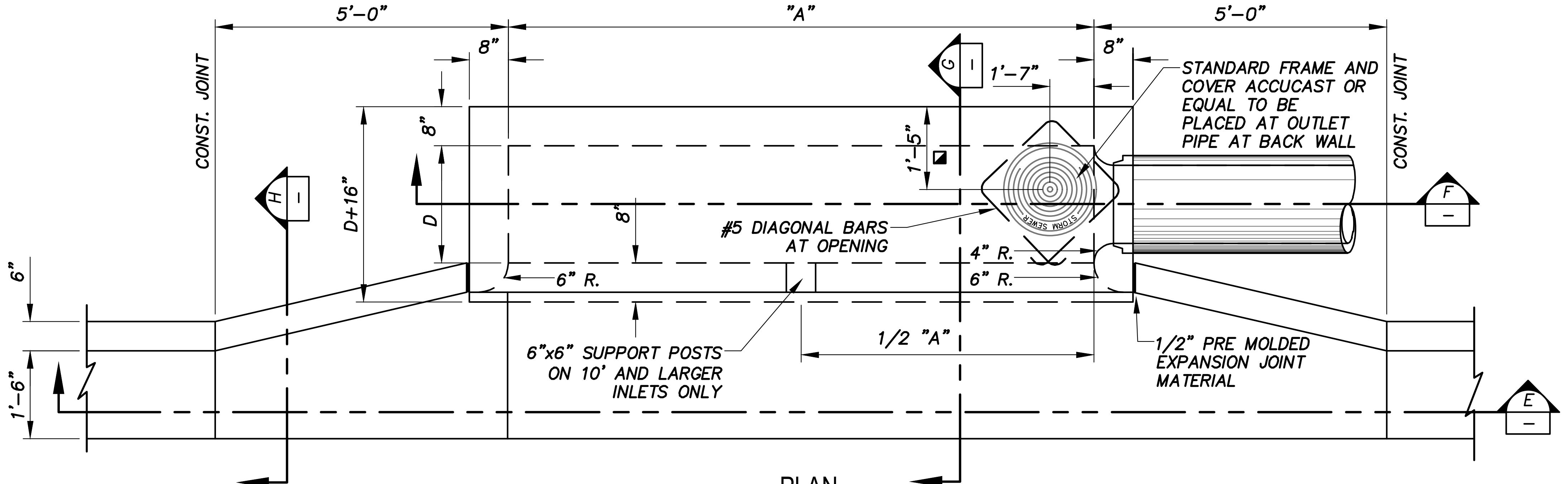
PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
5-002

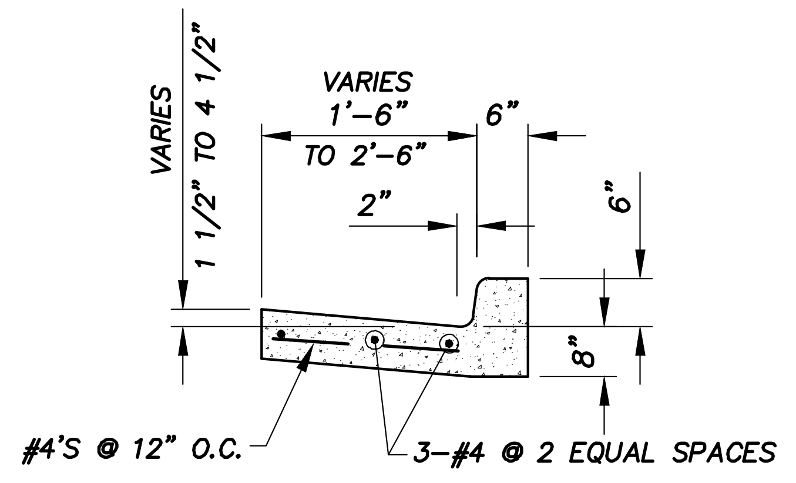
G:\DETAILS\CITY OF ROBINSON\STANDARD DETAILS\STANDARD SEWER DETAILS\5-002 SANITARY SEWER DETAILS.DWG, 5-002 SANITARY SEWER DETAILS, 6/2/2020 10:21:55 AM, achilds


5'–0"
"A"
5'–0"
CONST. JOINT
CONST. JOINT
8"
6 1/2"
6"
8"
2'–6"
8"
1/2" PREMOLDED EXPANSION JOINT MATERIAL
6"x6" SUPPORT POST ON 10' AND LARGER INLETS ONLY
#4 @ 12" O.C. EACH WAY

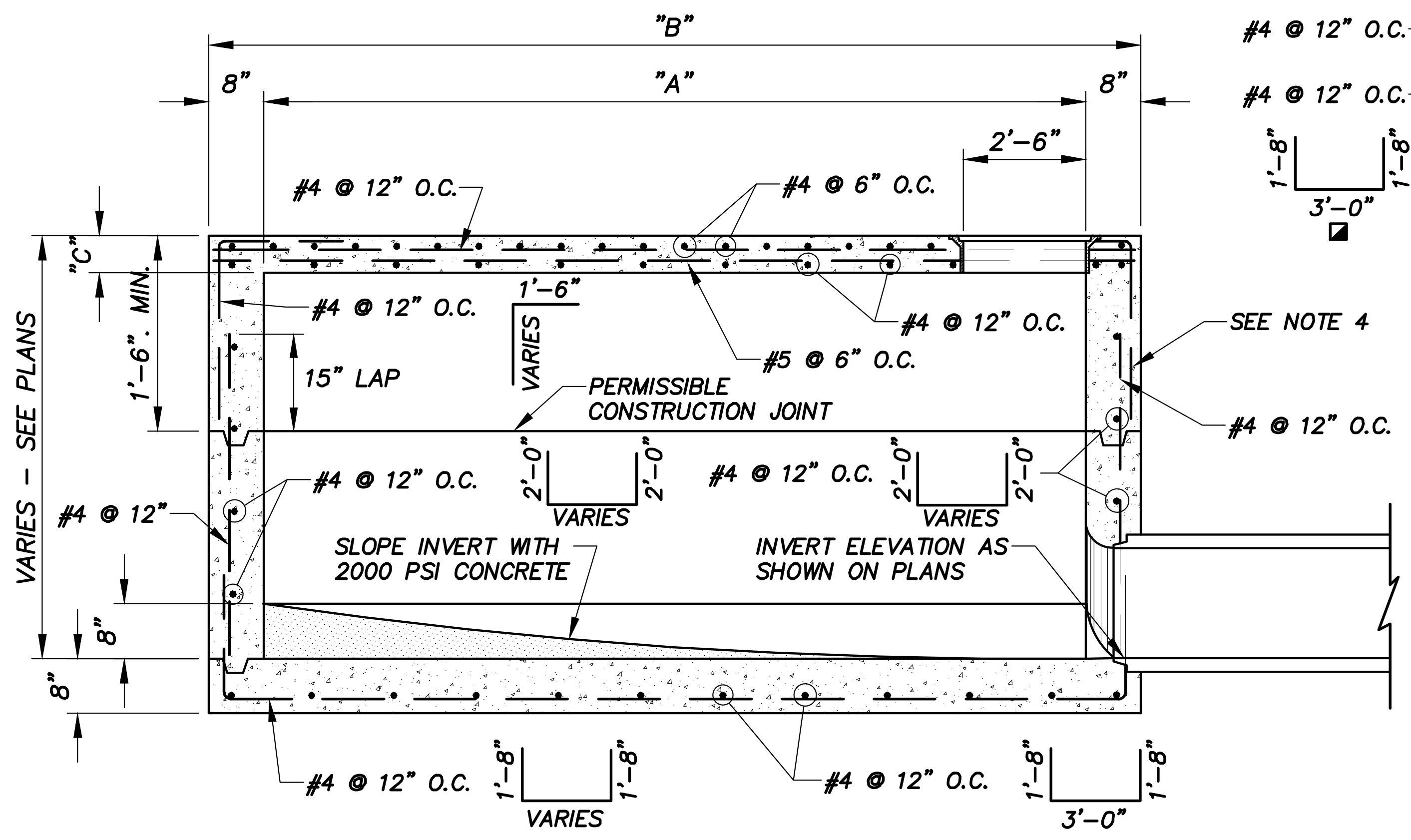
SECTION "E"


5'–0"
"A"
5'–0"
CONST. JOINT
CONST. JOINT
8"
8"
G
1'–7"
1'–5"
STANDARD FRAME AND COVER ACCUCAST OR EQUAL TO BE PLACED AT OUTLET PIPE AT BACK WALL
H
F
E
D+16"
D
8"
8"
#5 DIAGONAL BARS AT OPENING
4" R.
6" R.
6" R.
6"
1'–6"
6"x6" SUPPORT POSTS ON 10' AND LARGER INLETS ONLY
1/2 "A"
1/2" PRE MOLDED EXPANSION JOINT MATERIAL
D=O.D. PIPE + 1' (3' MIN.)

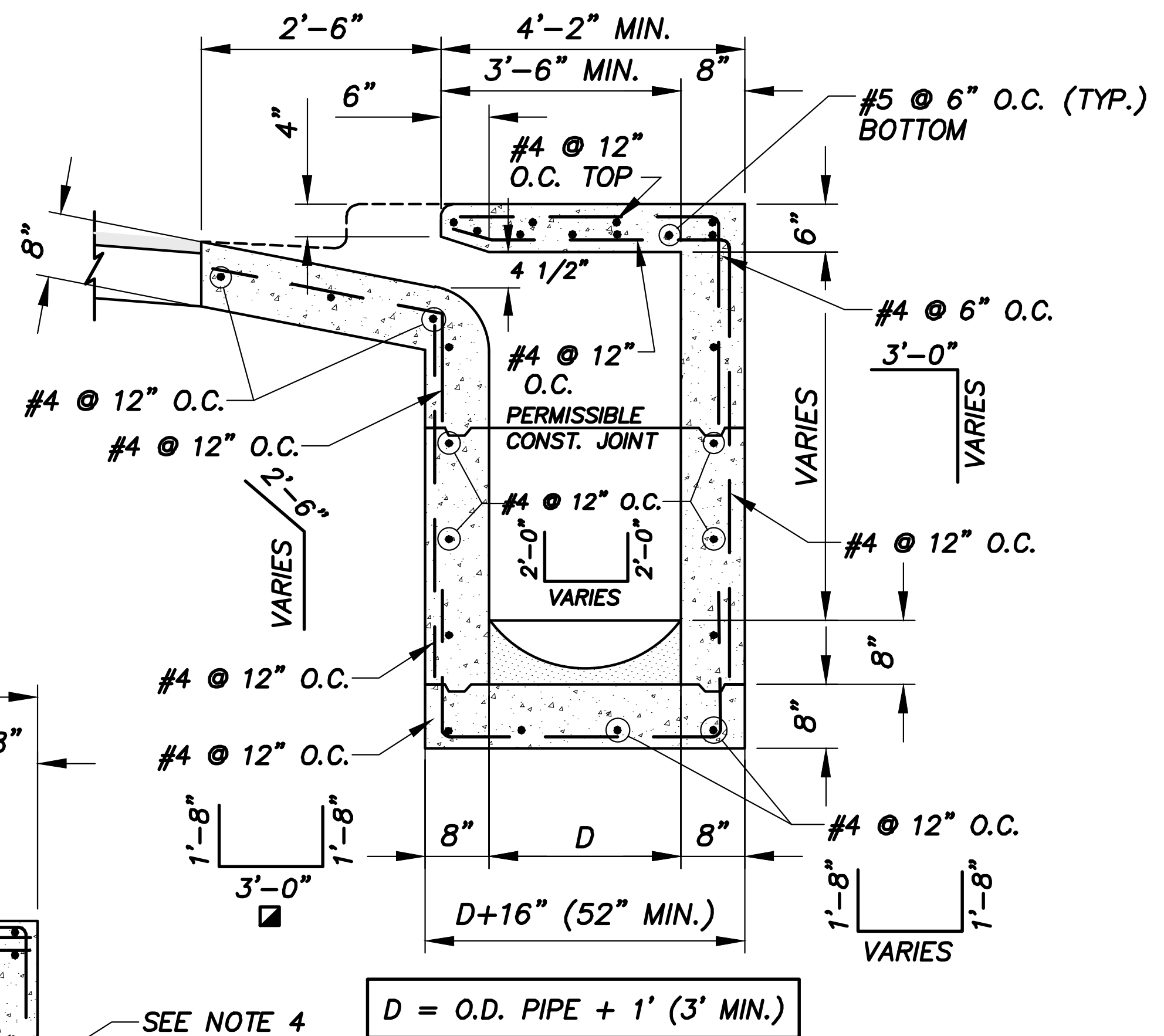
PLAN



SECTION "H"



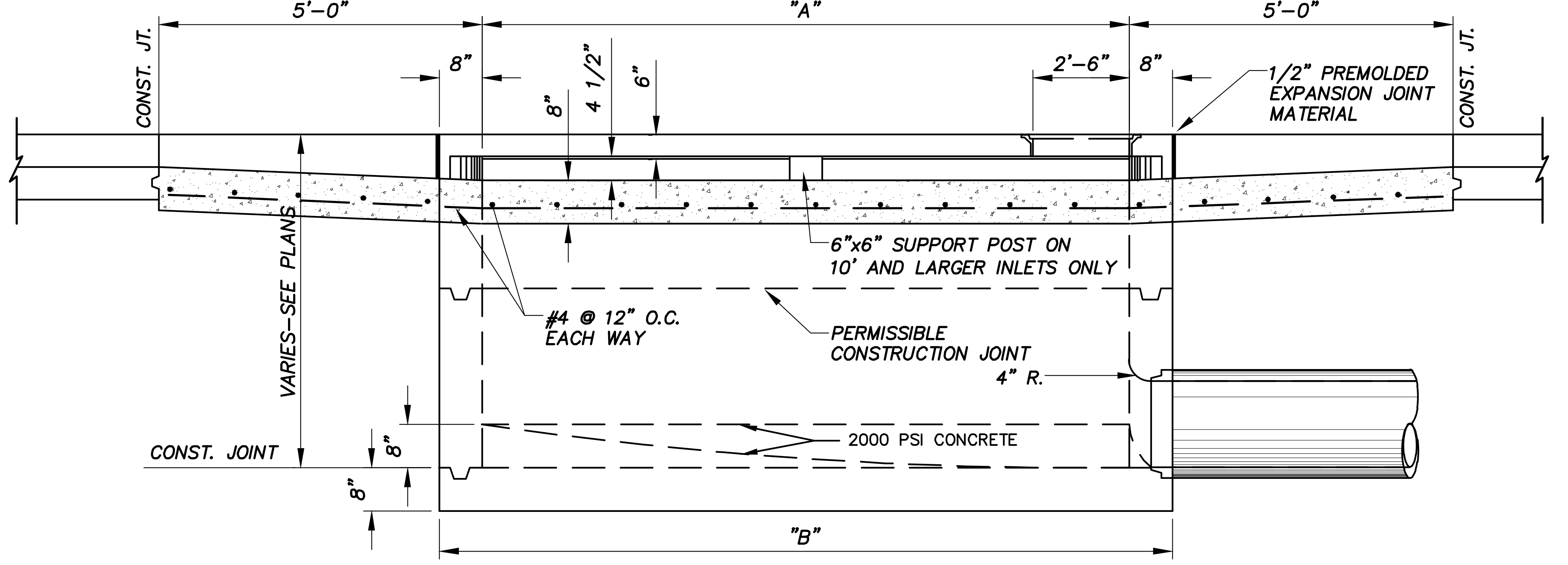
SECTION "F"



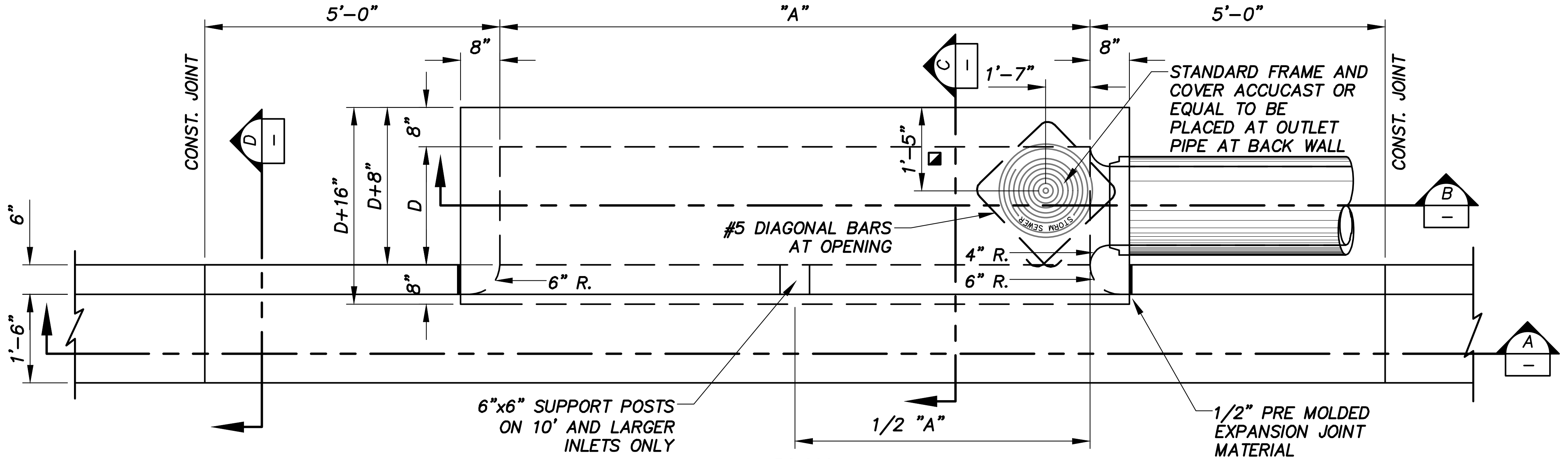
SECTION "G"

6010 CURB OPENING INLET TYPE CO-RECESSED

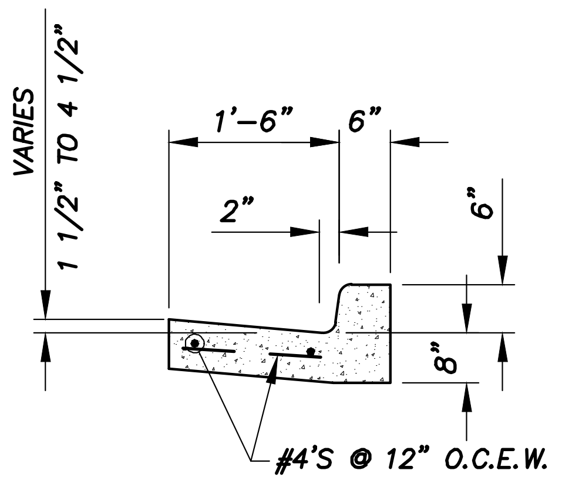
FULL SIZE = 1/2"=1'-0" - HALF SIZE = 1/4"=1'-0"



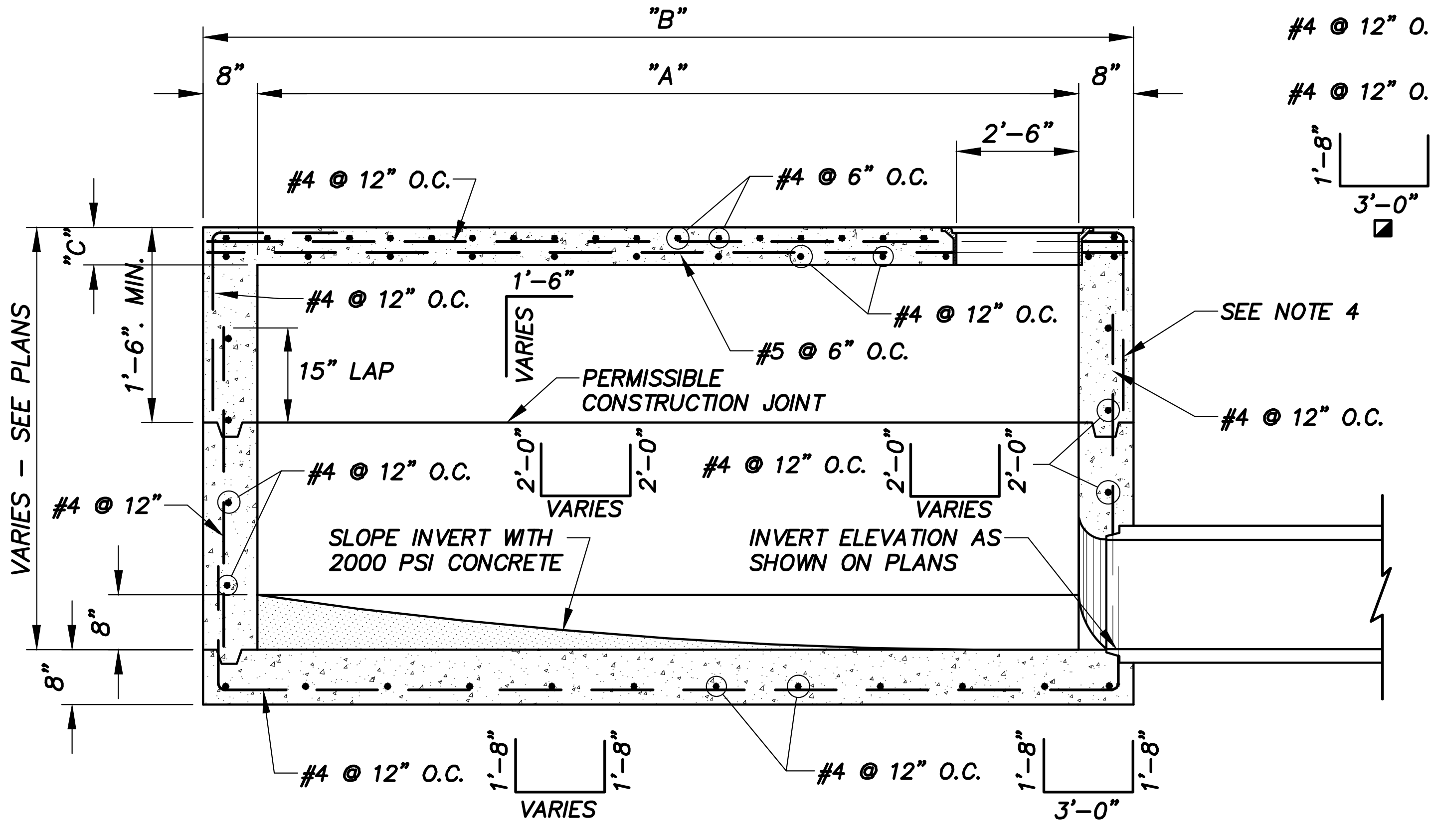
SECTION "A"


5'–0"
"A"
5'–0"
CONST. JOINT
CONST. JOINT
8"
8"
C
1'–7"
1'–5"
STANDARD FRAME AND COVER ACCUCAST OR EQUAL TO BE PLACED AT OUTLET PIPE AT BACK WALL
D
B
A
D+16"
D+8"
D
8"
8"
#5 DIAGONAL BARS AT OPENING
4" R.
6" R.
6" R.
6"
1'–6"
6"x6" SUPPORT POSTS ON 10' AND LARGER INLETS ONLY
1/2 "A"
1/2" PRE MOLDED EXPANSION JOINT MATERIAL
D=O.D. PIPE + 1' (3' MIN.)

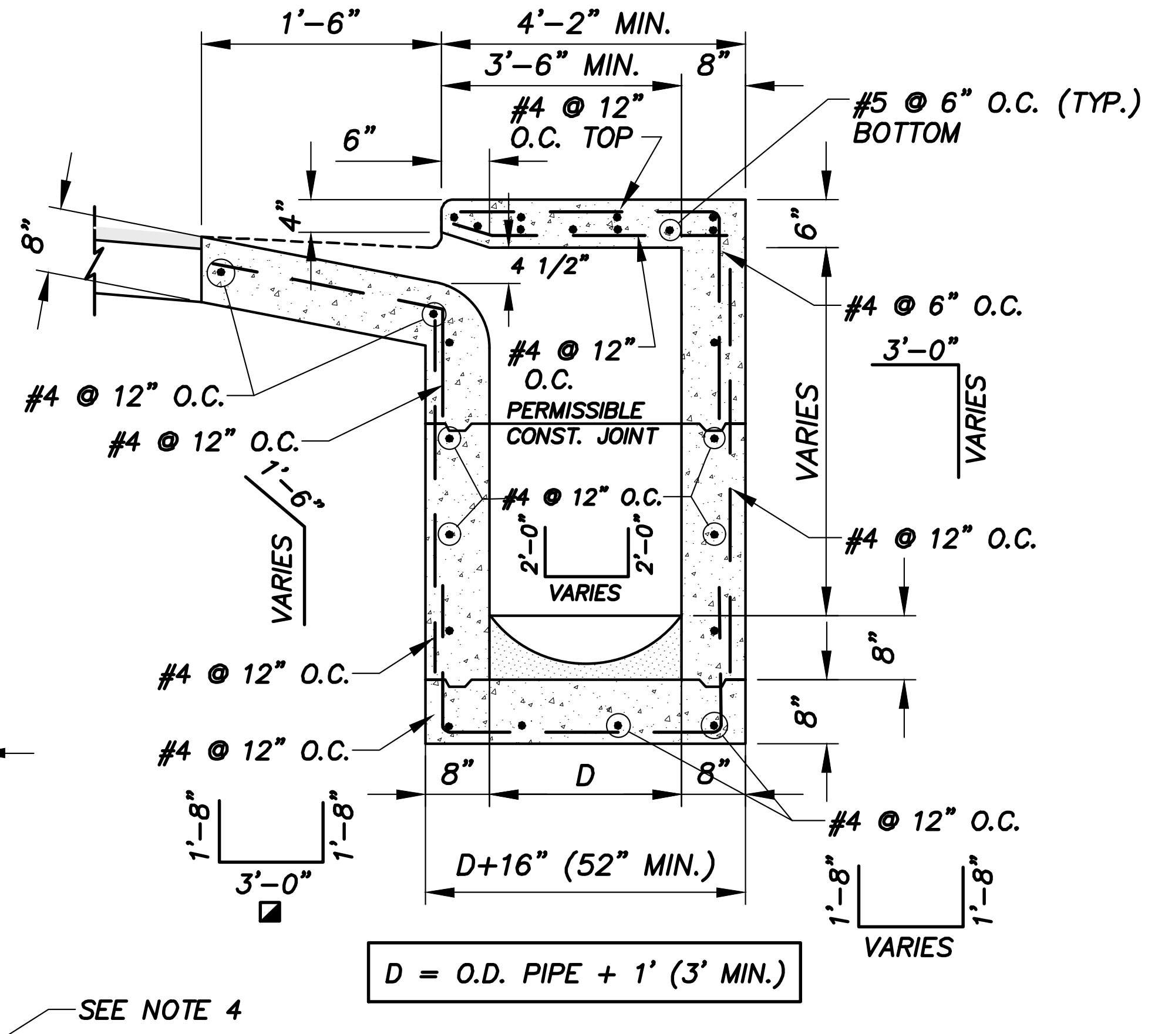
PLAN



SECTION "D"



SECTION "B"



SECTION "C"

6020 CURB OPENING INLET TYPE CO

FULL SIZE = 1/2"=1'-0" - HALF SIZE = 1/4"=1'-0"

GENERAL NOTES

1. "GENERAL NOTES" AND "SCHEDULE OF DIMENSIONS" ARE APPLICABLE TO BOTH THE TYPE CO AND TYPE CO–RECESSED INLETS.

2. SEE PLAN–PROFILE SHEETS FOR INLET SIZE, LOCATION AND ELEVATIONS.

3. ALL MATERIALS OF CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS.

4. ALL CONCRETE AND REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 30 00: CAST–IN–PLACE CONCRETE FOR CIVIL SITE IMPROVEMENTS. CONCRETE SHALL BE CLASS "C".

5. PRE–CAST CONCRETE INLETS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 41 00: PRECAST CONCRETE FOR CIVIL SITE IMPROVEMENTS.

6. DIMENSIONS RELATING TO REINFORCING STEEL SHALL BE TO CENTER OF BARS.

7. CONSTRUCTION JOINTS WILL BE PERMITTED AS SHOWN ON PLANS.

8. INLET SIZES NOTED ON PLAN–PROFILE SHEETS REFER TO DIMENSION "A".

9. PRE–CAST INLETS TO BE BEDDED ON COARSE AGGREGATE TYPE A2 FOUNDATION COURSE.

10. HERE GROUND WATER IS ENCOUNTERED, ALL LOOSE AND SPONGY MATERIAL WILL BE REMOVED AND REPLACED W/6" (MIN.) OF COARSE AGGREGATE TYPE A2 FOR FOUNDATION COURSE.

11. PLACE RING & COVER OVER OUTLET PIPE.

SCHEDULE OF DIMENSIONS

OPENING "A"	OUTSIDE "B"
3'–0"	4'–4"
4'–0"	5'–4"
5'–0"	6'–4"
6'–0"	7'–4"
8'–0"	9'–4"
10'–0"	11'–4"
12'–0"	13'–4"
14'–0"	15'–4"
AND LARGER	"A" + 16"

REV.	DESCRIPTION	DATE
1	GENERAL NOTES	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR
PUBLIC INFRASTRUCTURE

CURB OPENING INLET DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
6-000

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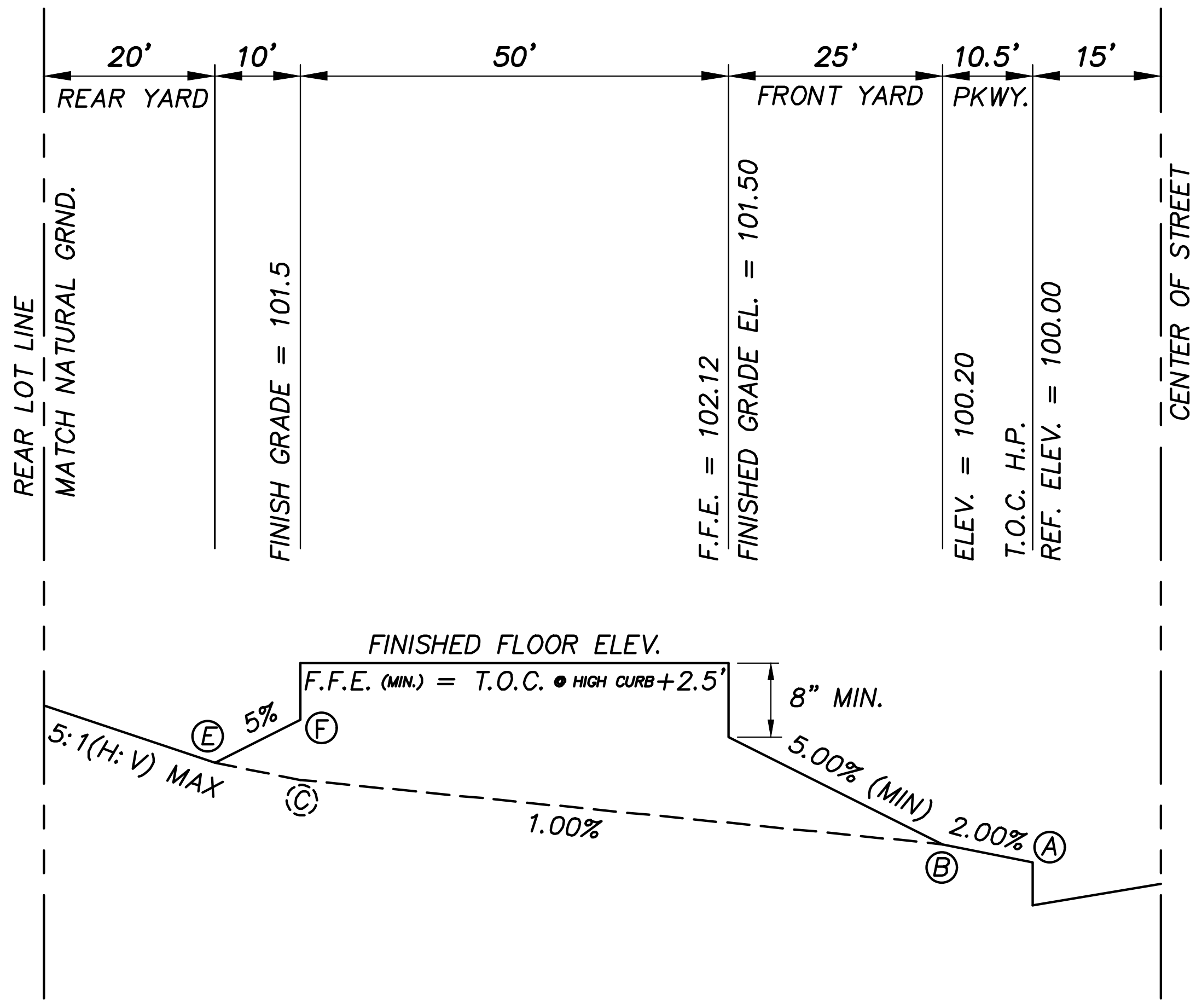
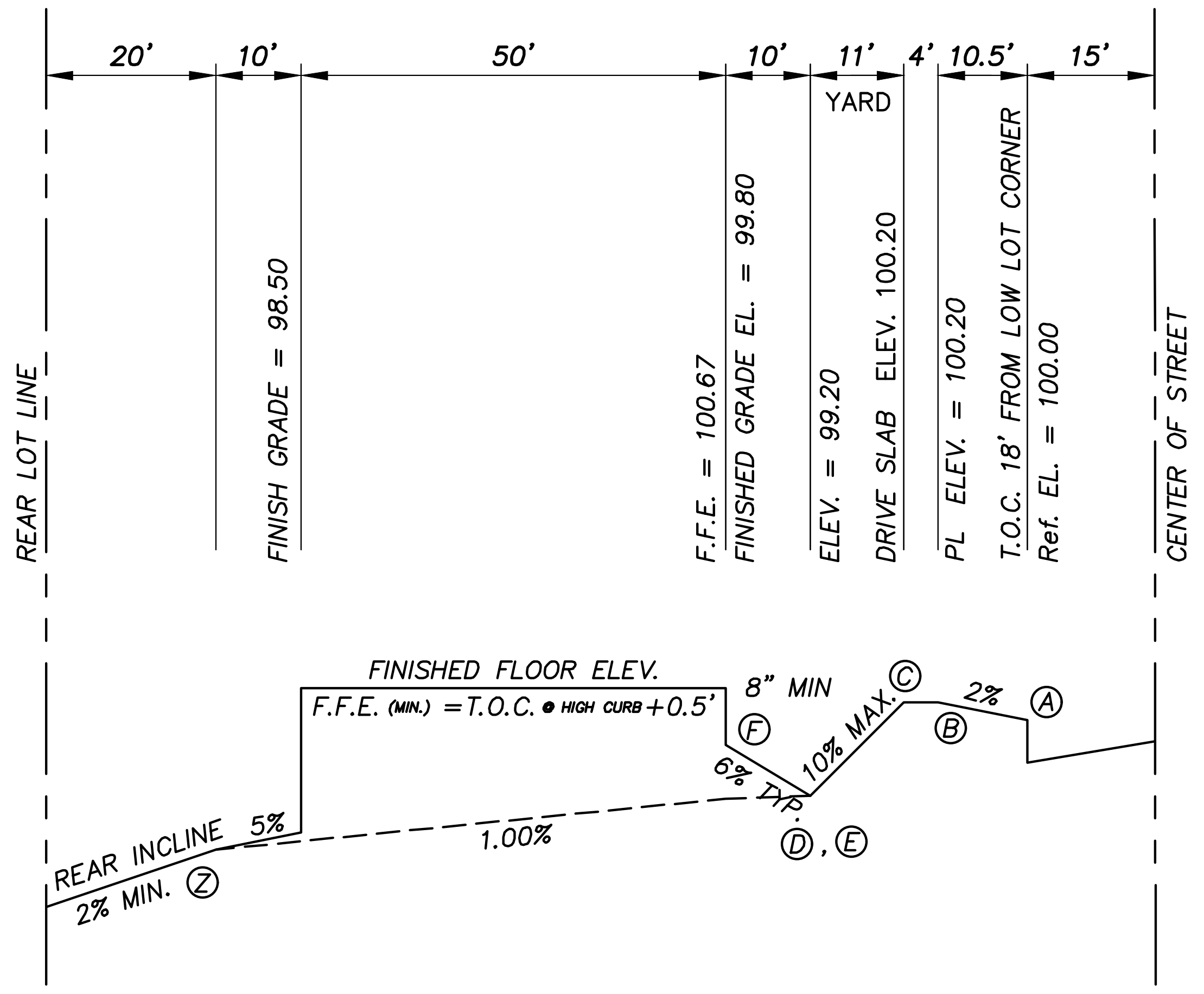
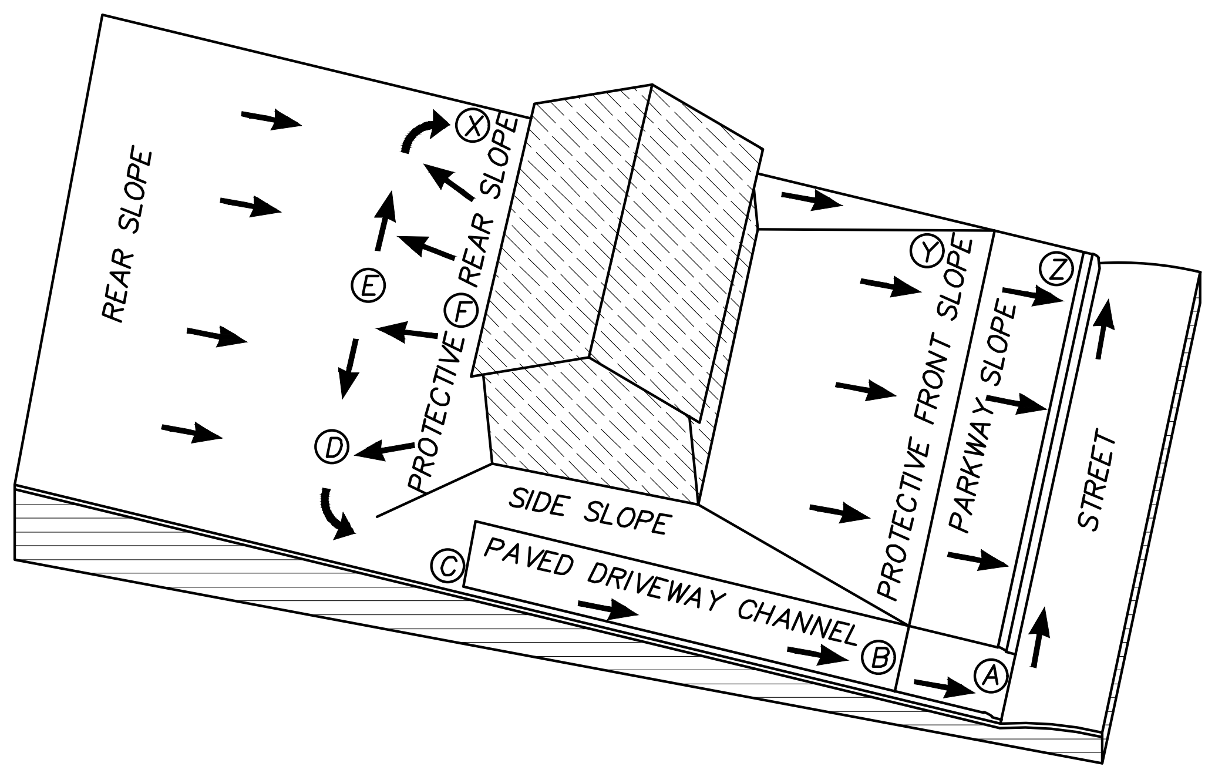


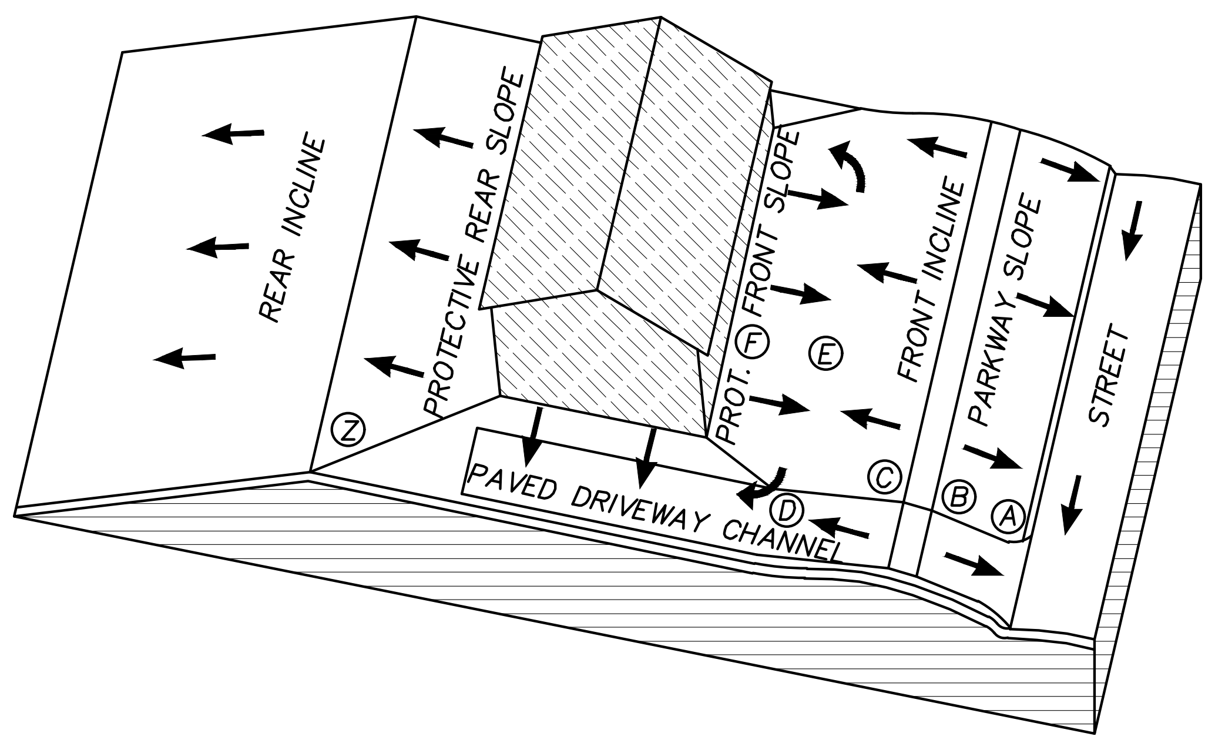
TYPICAL SECTION - ALL DRNG. TO STREET



TYPICAL SECTION - ALL DRNG. TO REAR LOT LINE



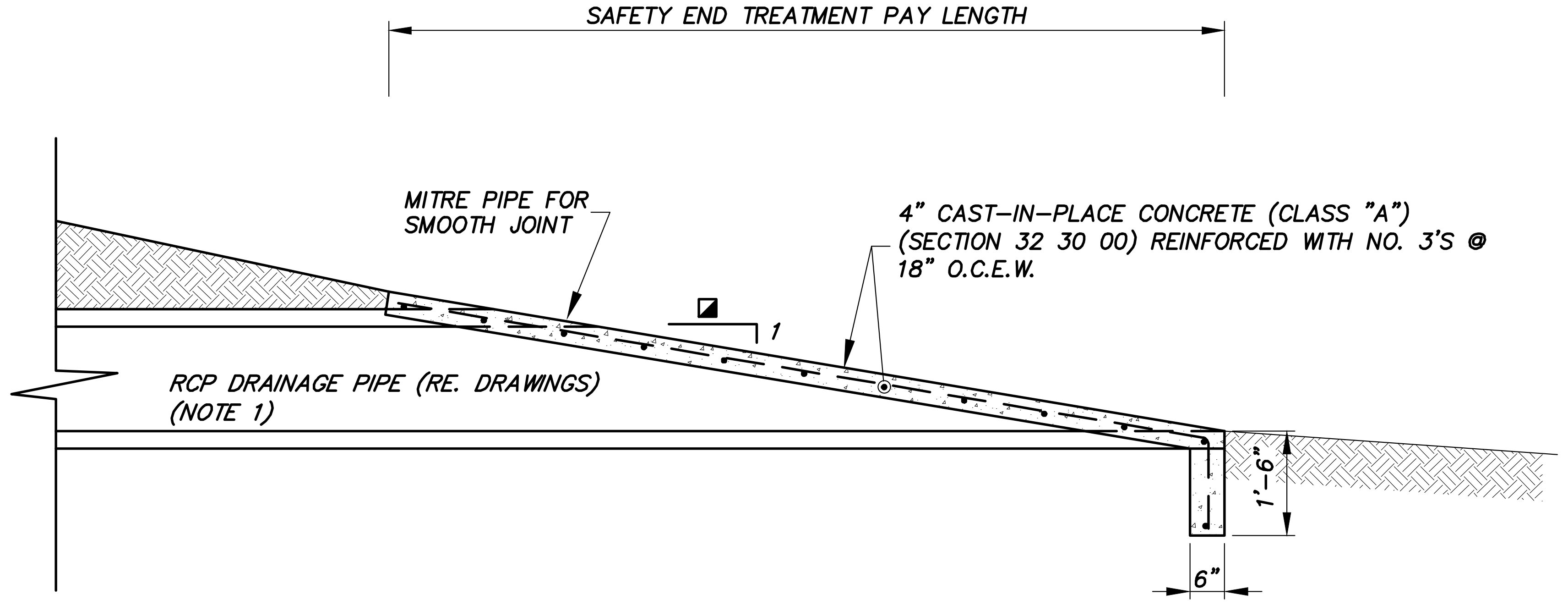
ALL DRAINAGE TO STREET



ALL DRAINAGE TO REAR OF LOT

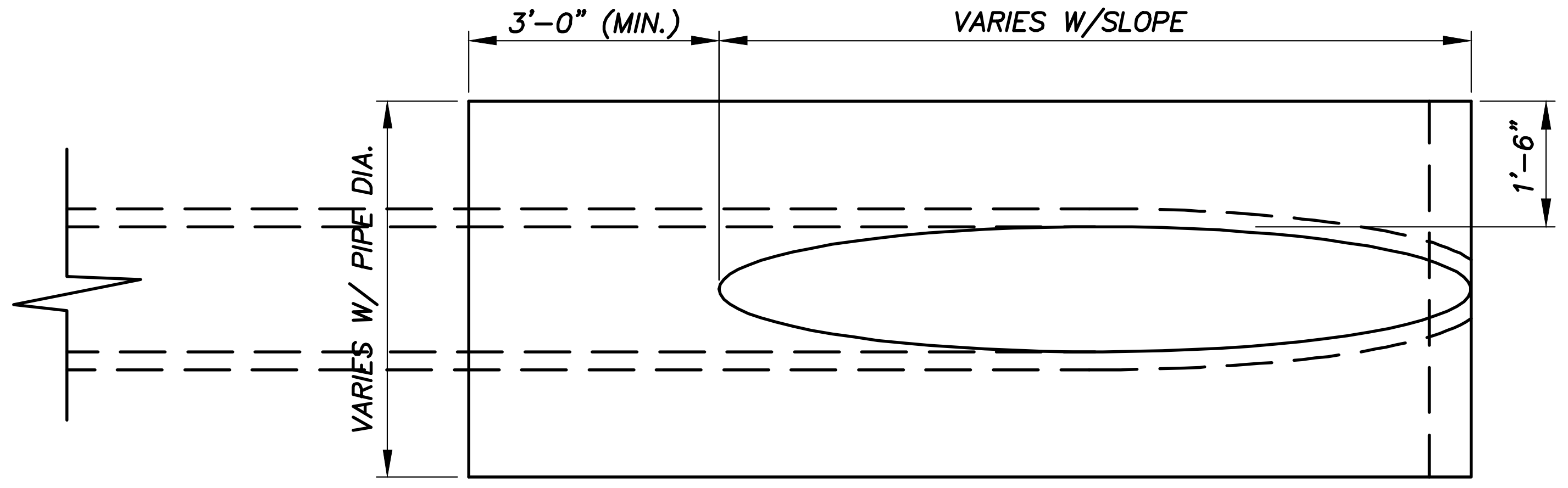
6050 LOT GRADING DETAILS

N.T.S.



SAFETY END TREATMENT PAY LENGTH
MITRE PIPE FOR SMOOTH JOINT
4" CAST-IN-PLACE CONCRETE (CLASS "A") (SECTION 32 30 00) REINFORCED WITH NO. 3'S @ 18" O.C.E.W.
◪ 1
RCP DRAINAGE PIPE (RE. DRAWINGS) (NOTE 1)
1'-6"
6"

SECTION



PLAN

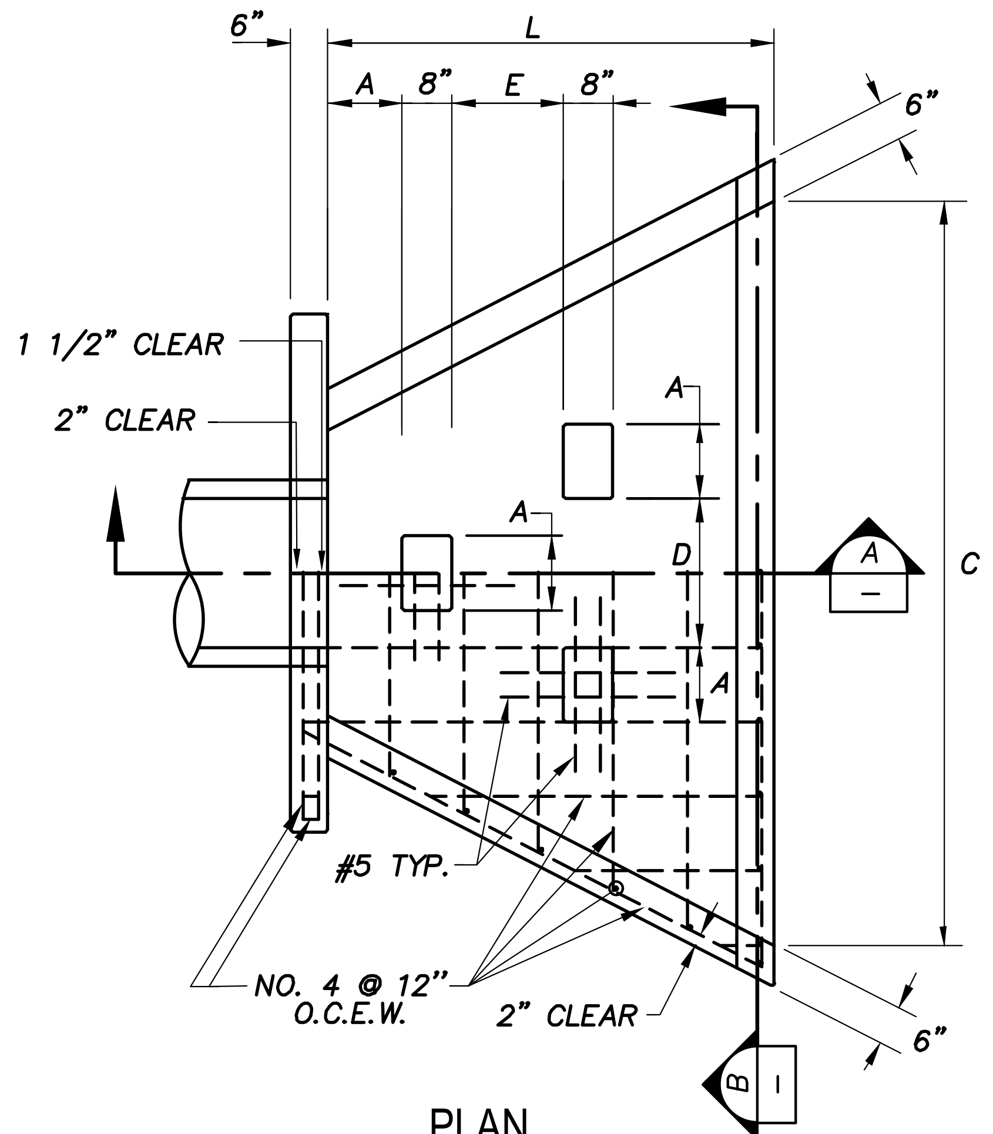
NOTE:

1. SEE DETAILS 2131, 2134 AND 2135 FOR PIPE MATERIAL.

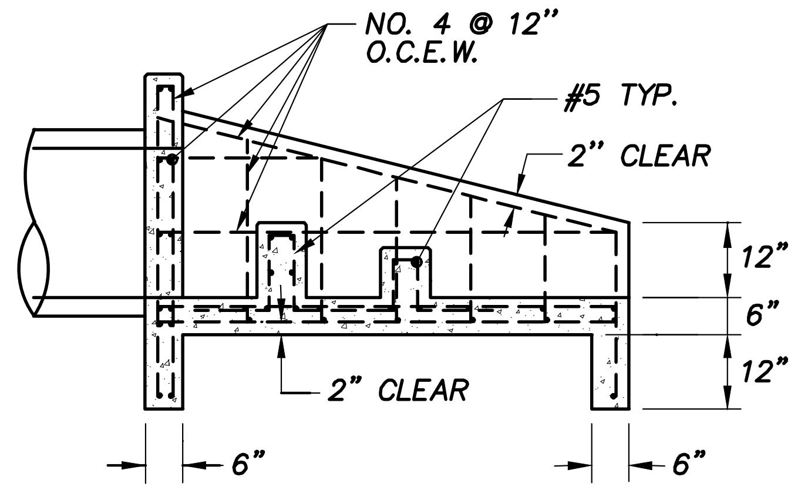
◪ RE. DRAWINGS FOR SLOPE 4:1 (H:V) MINIMUM

6060 SAFETY END TREATMENT (CAST-IN-PLACE)

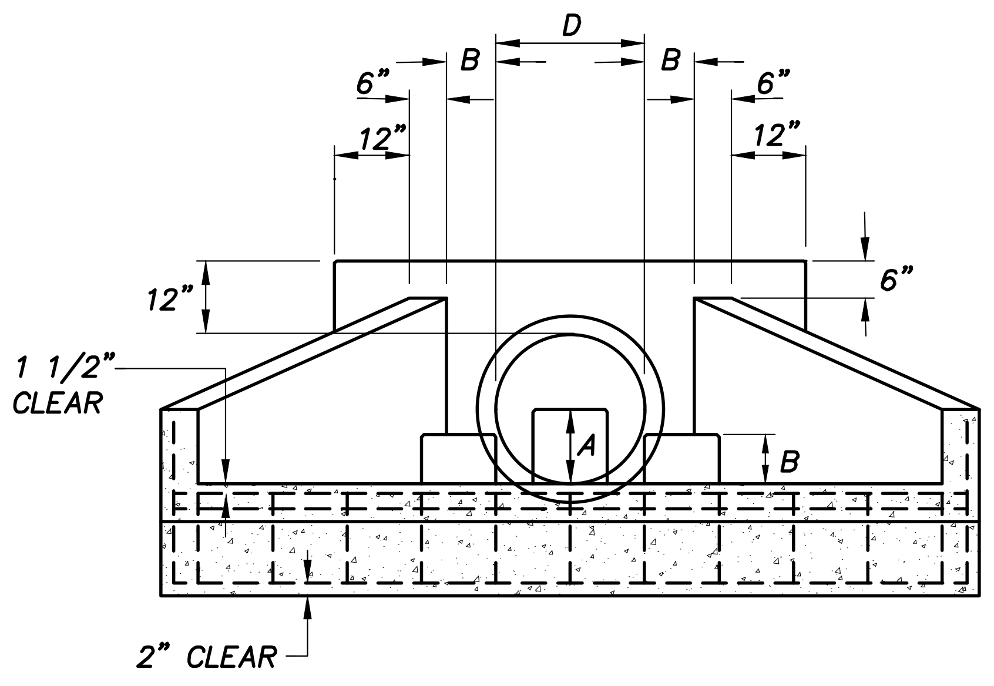
N.T.S.



PLAN



SECTION A-A



SECTION B-B

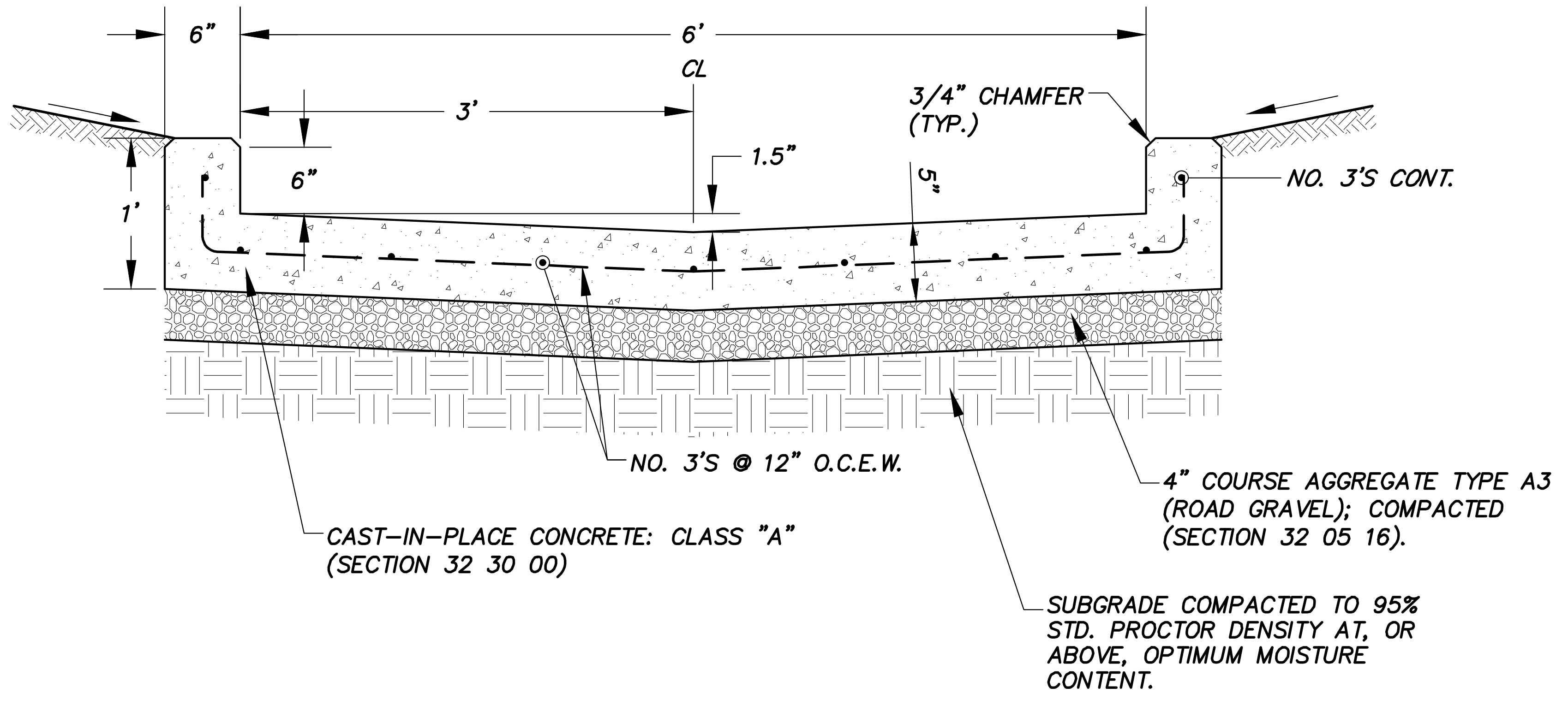
D	18"	21"	24"	27"	30"	33"	36"	42"	48"	54"	60"
A	9"	10"	12"	14"	15"	16"	18"	21"	24"	27"	30"
B	6"	7"	8"	9"	10"	11"	12"	14"	16"	18"	20"
C	90"	105"	120"	135"	150"	165"	180"	210"	240"	270"	300"
L	54"	63"	72"	81"	90"	99"	108"	126"	144"	162"	180"
E	12"	14"	16"	18"	20"	22"	24"	28"	32"	36"	40"

NOTES:

1. CAST-IN-PLACE CONCRETE SHALL BE CLASS "C" AND IN ACCORDANCE WITH SPECIFICATION SECTION 32 30 00.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 30 00.
3. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
4. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

6070 HEADWALL AND ENERGY DISSIPATORS

N.T.S.



6"
6'
CL
3'
3/4" CHAMFER (TYP.)
1.5"
6"
5"
1'
NO. 3'S CONT.
NO. 3'S @ 12" O.C.E.W.
4" COURSE AGGREGATE TYPE A3 (ROAD GRAVEL); COMPACTED (SECTION 32 05 16).
CAST-IN-PLACE CONCRETE: CLASS "A" (SECTION 32 30 00)
SUBGRADE COMPACTED TO 95% STD. PROCTOR DENSITY AT, OR ABOVE, OPTIMUM MOISTURE CONTENT.

NOTE: SAWED CONTROL JOINTS SHALL NOT EXCEED 10' C-C

6080 100-YEAR OVERFLOW FLUME

N.T.S.

REV.	DESCRIPTION	DATE
1	6080-100 YEAR OVERFLOW FLUME	10-15-19
1	6050-LOT GRADING DETAILS	10-15-19

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

DRAINAGE DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
#65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
6-001

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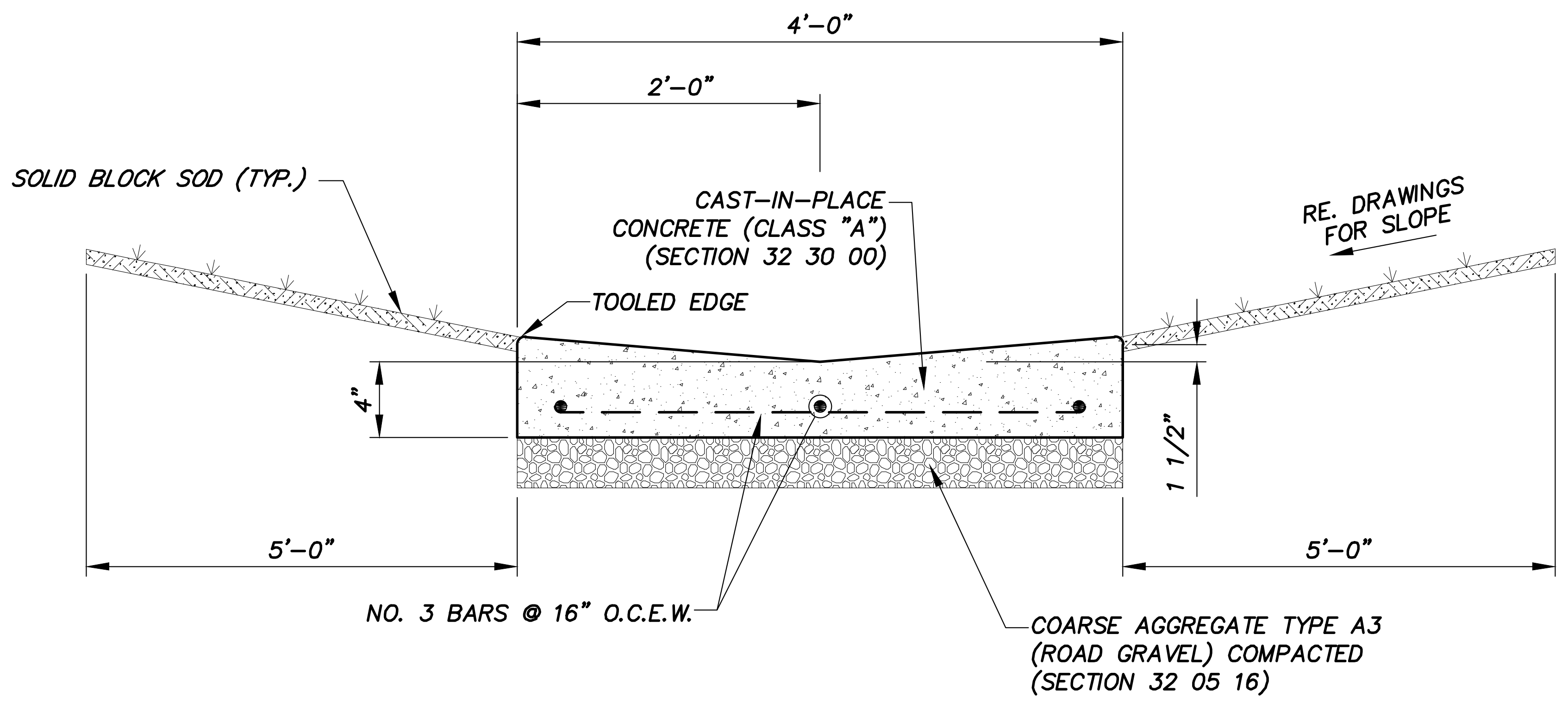
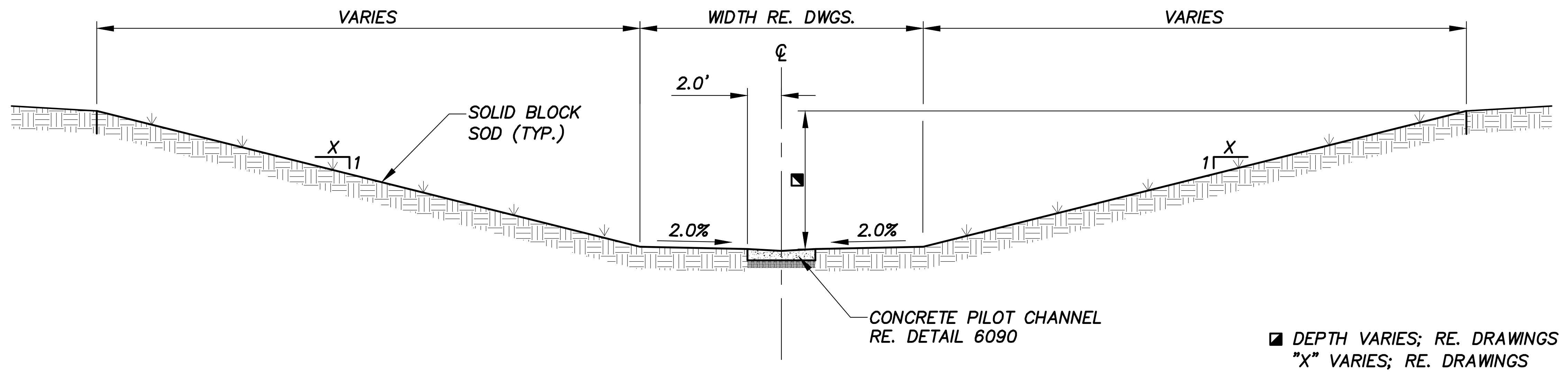

4'–0"
2'–0"
SOLID BLOCK SOD (TYP.)
CAST–IN–PLACE CONCRETE (CLASS "A") (SECTION 32 30 00)
RE. DRAWINGS FOR SLOPE
TOOLED EDGE
4"
1 1/2"
5'–0"
5'–0"
NO. 3 BARS @ 16" O.C.E.W.
COARSE AGGREGATE TYPE A3 (ROAD GRAVEL) COMPACTED (SECTION 32 05 16)

6090 CONCRETE PILOT CHANNEL

N.T.S.



6140 TRAPEZOIDAL EARTHEN CHANNEL WITH CONCRETE PILOT CHANNEL

N.T.S.

REV.	DESCRIPTION	DATE
1	6090-CONCRETE PILOT CHANNEL	5-18-20

CITY OF ROBINSON

CITY OF ROBINSON

STANDARD DETAILS FOR PUBLIC INFRASTRUCTURE

DRAINAGE DETAILS

6-1-2020
DATE

George E. Walker, Jr.
GEORGE E. WALKER, JR.

GEORGE E. WALKER, JR.
65360

PM	GEW
DESIGNED	GEW
DRAFTED	AC/MC
CHECKED	GEW

DRAWING NO.
6-002

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